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THE PATHOLOGY AND THE ETIOLOGY OF PROSTATIC HYPERTROPHY. SUPRAPUBIC DRAINAGE AND MYOMECTOMY OF THE PROSTATE AS METHODS OF TREATMENT AND CURE.*

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The terrible sufferings which are caused by a lasting retention of the urine, and the dangers to life which accompany it, as well as their relative frequency in old men, were well known to the physicians of olden times. Hippocrates mentions this condition, and adds that it is incurable. This opinion of Hippocrates was held by physicians for many centuries. Morgagni in his *Epistolæ de sedibus et causis morborum*, printed in 1761, first began to shake this pessimistic opinion by his researches. He showed that the ischuria and concomitant difficulties of defecation were due to enlargement of the prostate. John Hunter corroborated Morgagni's assertion, and devotes one chapter in his "Treatise on the Venereal," London, 1786, to prostatic hypertrophy. He mentions the difficulties of micturition in old men due to enlargement of the prostate, and gives some illustrations of specimens. Everard Home, in his "Practical Observations on the Treatment of the Diseases of the Prostate Gland" (London, 1811 and 1818), as well as Desault and Bonet, who were pupils and followers of John Hunter, also corroborate Morgagni's discovery of prostatic hypertrophy and its concomitant evils.

Up to the present time the etiology of prostatic hypertrophy has not been cleared up. A completely satisfactory explanation of the process has not been found. Sir Henry Thompson defined it as an "idioplastic tumor" in his lectures, which I had the great pleasure of hearing. Enlargements of organs during the middle and younger years partake largely of an inflammatory nature, or are found to be small-cell infiltrations. Knowing that old age somewhat inclines towards or favors the development of tumors, we are not surprised to find that a part of the sexual system may show a non-inflammatory enlargement at a time when this system in all its other organs and in its functions is undergoing a retrograde metamorphosis and is being more or less put to rest. However, let us remember that Sir Henry's definition is not explanatory in any sense, and leaves the etiology of our subject in the dark.

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Reginald Harrison seems to think that the hypertrophy is caused by over-exertion or overwork of the organ, whose function he conceives to be aiding the bladder in the evacuation of its contents. He thinks that the main purpose of the prostate is to furnish a muscular support, "primarily to the bladder and its contents, and secondarily to the adjacent parts," and thus seems to regard enlarged prostate as a form of compensatory hypertrophy similar in its etiology to the well-understood hypertrophies of the muscular walls of the heart.

Guyon's theory is opposed to this view, he regarding the hypertrophy as due to arterio-sclerosis of the urogenital tract.

White agrees with Velpeau that in this disease we have an analogue of the fibromyoma uteri. Sir Henry Thompson also favors this view, and I also think that the myoma of the prostate is analogous to myoma uteri, and I think that it may be referred to developmental or congenital cell-nests which lie dormant in early life and are only incited to late enlargement by the incidents accompanying the functions of the genito-urinary organs in health and in disease.

Thus we must admit that the etiology of prostatic enlargement is not understood, and the speculations which we have before mentioned are only a little more respectable than those speculations which bring diet, occupation, modes of living, abstinence and indulgence, sexual habits, gout, rheumatism or gonorrhea into direct or indirect etiological relation with the disease.

In most of the diseases in which the etiology is not cleared up the pathology is also incomplete. In the disease under discussion, however, the numerous researches by pathologists and by practical surgeons have well-nigh cleared up the pathological anatomy and also added to the knowledge of the functional disturbances which we observe as the symptoms of prostatic hypertrophy.

Cancers, sarcomata, tuberculosis, echinococcus are rare diseases of the prostate which produce enlargements of the organ. Adenoma rarely occurs, but the hypertrophy of the prostate which is under discussion now is of very frequent occurrence in the aged. In an investigation which I made upon one hundred men over sixty years of age, and taken consecutively as they came before me in my work in St. Louis, Missouri, U. S. A., I made a rectal examination in each with a view to determine the size and condition of the prostate. Of this number only fifteen complained of symptoms which were undoubtedly due to hypertrophy, but there was noticeable enlargement in thirty-one cases, without any functional disturbance. These data, being based on a physical examination of the living patient, are probably not as reliable as the figures of v. Dittel and Sir Henry Thompson, who investigated cadavers. The former found twenty-two per cent., and the latter thirty-four per cent. of enlarged prostates in cadavers of aged men, the exact ages not being known in all the cases. I have twice found enlargements of the gland in the form of nodules in boys. These observations were accidentally made upon two brothers, aged seven and nine years, who had died of diphtheria, and I am of the opinion that these small interstitial myomata will be quite commonly detected if looked for by those who have opportunities of frequently examining the prostate glands of young men and boys upon the dissecting table.

Prostatic hypertrophy when microscopically examined is found to consist of an increase of the non-striated muscle cells and connective tissue which lies between the tubular glands. These latter are displaced by the hypertrophic muscle fibers, and in extreme cases are nearly absent.

We are justified in denominating the condition which we find in most cases as myomatous hypertrophy; or if the myoma assumes the shape of a tumor, we may speak of a myoma or fibromyoma of the prostate. In rare cases the enlargement depends upon a hyperplasia of the glandular structure, and then we may speak of a diffuse or circumscribed adenoma of the prostate. The cases of acute swelling of the prostate partake of an inflammatory or infectious character, and do not come under the scope of this investigation, but their existence is undeniable, although I have never had an autopsy of a case of acute prostatitis.

Hypertrophy may be found in a diffuse form, so that all parts of the organ are affected alike, and there is an even enlargement of the whole gland; or tumor-like nodules, sometimes as large as a walnut, may be found in the form of hyperplastic knots of tissue, which are plainly visible upon sections made through the organ. All parts of the organ may be hypertrophied, but there are certain parts which are favored and most frequently attacked.

Mercier was the first to show that the hypertrophy usually begins at or near the isthmus of the gland, and that it frequently there forms what we call the middle lobe, which projects into the bladder near its neck in the form of a teat. Behind this lobe the so-called recessus or *cul-de-sac*, in which the residual urine accumulates, occurs. In other cases the lateral lobes, or only one of them, may become hypertrophic.

The cause of the sufferings of prostatics, as well as the danger to which they are exposed, is the retention of urine which often occurs as a result of the hypertrophy.

Hypertrophy of the prostate does not always lead to retention of urine, and it is often the enormously large prostate of unchanged contour which does not produce essential or severe troubles. The more localized hypertrophy, affecting only one part upon one side—*asymmetric hypertrophy*, as it were—a small degree of enlargement may cause severe troubles. This takes place when such parts of the organ are affected by the growth as are in close relation to the lumen of the urethra and project into the canal or neck of the bladder as they increase in volume.

A hypertrophy of the lateral lobes may and often does compress the urethra laterally and change it into a vertical narrow slit. This slit is often one and one-half inches long, lying between the two enlarged lateral lobes. The urethra is a vertical slit, the two walls of which may be in contact with each other in some places, but are always closely approximated. When only one lateral lobe is hypertrophic, or when one lateral lobe is more enlarged than the other, the urethra is laterally displaced and pushed out of the median line.

Mercier proved that the hypertrophied teat-like middle lobe will obstruct the internal orifice of the urethra when the bladder is contracted for the purpose of micturition. He claims that an evacuation can only take place after a greater distention of the bladder by the accumulation of more urine is accomplished. But as soon as a part of the urine is discharged the valve will again become sufficient and prevent complete evacuation. Thus the residual urine is accounted for in a simple mechanical way, and we can easily understand the interruption of the stream and the tenesmus or stranguary. We can understand the somewhat paradoxical phenomenon of incomplete evacuation while the patient can voluntarily pass urine.

I have the conviction that this valve-like action of the middle lobe is only possible when it is very small and thin, but that it acts more like a dam when it is broad and stiff.

There are some cases in which the internal urethral orifice projects into the lumen of the bladder. It looks much like the portio of a virginal uterus when the hypertrophic growth of the prostate has grown upwards and backwards into the bladder. In a case of this kind the urethral opening will be closed or narrowed, and will be projected into the cavity of the bladder as the muscular coats contract. The mechanics of this condition seem to be that the urine contained in the bladder will exercise an even pressure from all sides upon the cervix-like prostate, and the more pressure that is exercised by the muscular wall of the bladder upon its contents the more will the urethra be compressed and the more difficult will be the voiding of urine. In this form of hypertrophic prostate there will be nothing to hinder the introduction of the catheter and the drawing of urine if only the catheter is long enough.

In old men there is always more or less of a *cul-de-sac* at the posterior lower part of the bladder, and we can readily see how an enlarged middle lobe must help to increase the size of this excavation. According to Dittel and his assistant, Schustler,* middle lobes of the prostate without enlargement of one or both of the lateral lobes are very rare. I have never seen but one case of solitary enlargement of the middle lobe; and according to my own observation the commonest and most usual form of prostatic hypertrophy is the bilateral enlargement of the lateral lobes in a nearly symmetrical form; and when one lobe grows more than the other, the one will bulge over and cause depression in the other and the urethra will be compressed or completely closed, so that the urine cannot escape. In this condition the vesical mouth of the urethra is not the cause of the retention as much as the two opposite contiguous lateral lobes of the enlarged prostate.

The first bad effect of retention of urine, when not relieved by the catheter, is upon the walls of the bladder in a purely mechanical way by pressure of the mass of urine on the vesical wall. This, of course, causes dilatation of the bladder. The long-continued exertion of the muscular coat in trying to expel the urine will make greater demands on the muscular coat, and the constant efforts to overcome the obstacle will be responded to by a compensatory hypertrophy of the muscular layers of the bladder wall. The result will be a peculiar net-like concentric hypertrophy of the bladder, which is known as (*vessie en colonne*) trabecular bladder, and which is so often seen at autopsies of patients who have narrow urethral strictures. The intravesical pressure frequently causes diverticula and pockets to form by the bulging out of the mucosa between the muscular trabeculæ.

A chronic and extreme retention of urine causes a final dilatation of the ureters and of the pelvis of the kidney, and may cause an absorption by pressure of the secreting tissues of the kidney. When the entire urinary system or canal is thus distended the valvular opening of the ureters, which is effected by their oblique entrance into the bladder, is overcome. The vesicle orifices of the ureters are found widely patulous. The dammed-up urine in the bladder, in the ureters and in the pelvis of the kidney forms an uninterrupted column of fluid in a single

*"Contributions to the Knowledge of Prostatic Hypertrophy." *Medicin. Jahrbuecher, Zeitschrift der k. k. Gesellschaft der Aertzte in Wien.* Vol. xxiv. 1867.

large receptacle which is not divided into sections or divisions by a septum or valve of any kind. It is easily understood how, under such circumstances, an incipient purulent cystitis will rapidly spread to the pelvis of the kidney and to the kidney substance, and will cause a pyelonephrosis.

The prostatic patient is usually first notified of his trouble by a difficulty in voiding urine. This difficulty grows as the hypertrophy increases. Some day a retention of the urine takes place. Symptoms of irritable bladder, frequent desire to urinate and pain, often very severe, are other concomitants. There may be backache and tension in the region of the bladder. Even when spontaneous voiding of urine is still possible, the complete evacuation of the bladder may be impaired or interrupted from a want of power in the bladder wall to contract. A part of the urine in the *cul-de-sac*, or in some pockets, may become stagnant. Now, if by means of an unclean catheter, or by the introduction of some bacteria that always inhabit the anterior urethra, as was shown by Lustgarten and Mannaberg, into the bladder the urine is decomposed, a catarrhal cystitis is soon developed. Decomposed urine causes a continual irritation and the cystitis spreads into the deeper layers of the bladder wall, and in the presence of pyogenic bacteria we soon have a suppurative or gangrenous cystitis.

The greatest danger consists in the upward progress of the infection, through the ureters to the kidneys. We often find that the infection spreads rapidly, as there is nothing to interrupt its progress from cystitis to pyelitis and nephropyelitis. Prostatics nearly all die of pyelonephritis sooner or later; the clinical picture is that of pyelonephritis and sepsis, except in some cases when both kidneys are severely affected and they die an easy death with uremic symptoms.

SUPRAPUBIC CYSTOTOMY AS A METHOD OF DRAINAGE IN THE TREATMENT OF HYPERTROPHY OF THE PROSTATE.

Suprapubic cystotomy is an operation which finds its application in (1) stone in the bladder; (2) tumors and growths; (3) hypertrophy of the prostate; (4) foreign bodies; (5) exploration of the bladder; (6) drainage of the bladder.

It is a recognized and successful method of treatment in all of these conditions. The technique varies with the object in view. If it is desired merely to open the bladder for the removal of a foreign body the wound may be closed at once. If we desire to establish drainage the bladder will be kept open and a buttonhole may be established by stitching the mucosa to the skin. This fistula may be left open for weeks or months, but can be closed whenever the object of the drainage has been achieved. I will not describe the method of operating because it is a simple trick entirely devoid of danger in the hands of any experienced surgeon. I regard it as one of the minor surgical procedures, and may assume that you will all agree to this proposition. A little reflection will show that the operation in men is only indicated when the bladder is full or can easily be filled with either air or water. The use of a rectal bag is unnecessary; in short, the operation is one of the simplest and easiest in all surgery. But one landmark is required, and that is the symphysis pubis, behind which the bladder is always found, and is easily punctured or incised with or without an intravesical guide. I have only to do with the operation to-day in its relation to drainage as a method of treatment in prostatic hypertrophy and its most troublesome complication, cystitis.

Some ten years ago I got the notion that suprapubic drainage would cure prostatic hypertrophy. I reasoned that by the drain I could give complete physiological and mechanical rest to the bladder, and I could prevent the unrest due to the alternately filling and emptying of the bladder. We all know that nature does its work of repair rapidly and painlessly if we can only give rest to the diseased organ. This axiom applies to all diseases without exception, including the many forms of infection. What is infection unless it be the unrest produced by microbes and their toxic products upon the tissues? Remove the toxic agents and the cells will be at rest, there will be no inflammation. The best definition of inflammation is: Inflammation is the response made by the tissues to toxic agents which invade them. I had often seen the mucosa of the bladder which had become inflamed and ulcerated change into its normal condition in a few weeks after a suprapubic section and drainage; and of course I knew that the cystitis accompanying many cases of hypertrophied prostate would disappear under the free drainage and the rest which was given the bladder by this simple operation. There can be no doubt on this point; but I had hoped that the hypertrophied prostate, under the influence of rest, would undergo an absorption and atrophy, and that a decrease in size which might be permanent would take place. In this latter hope I was doomed to disappointment.

It is true that in all cases of prostatic hypertrophy in which I made free permanent drainage for from three to ten weeks, the urine became normal in color, the cystitis was much improved and in some cases entirely cured.

It is also true that the enlarged prostate in each case became smaller, and that the patients were exceedingly comfortable during the time that the drainage was kept up. A gentleman, Mr. T., who had a severe cystitis, and who suffered extremely from his enlarged prostate, was so much relieved by the suprapubic drainage that his praise of the service rendered him was most grateful to my ears. "Why, just think of it! I sleep all night without getting up, do not have to use the catheter, have no temperature at bed-time, and my appetite has returned." This gentleman died suddenly one morning as the nurse woke him to bring his breakfast. He just raised up in bed to greet the nurse and fell over dead. In that case I was permitted to hold an autopsy, and I found that the prostate was quite large, and that there was a large myoma in the left lateral lobe of the prostate and a small one the size of a filbert in the right lobe which projected across the median line. It seems clear to me now that no matter how long I might have drained this man's bladder the myomata would probably not have atrophied, and I am reasonably certain that the cystitis would have returned with the closure of the suprapubic drain-hole and resumption of the catheter life.

I may add that the death was due to embolus, and that most likely the primary thrombus came from a plugged vesical vein.

In several of my cases I had the great pleasure of seeing the prostatic hypertrophy become much reduced and remain in this condition for over a year, the patients regarding themselves as quite cured and having thrown away their catheters. But I am compelled to report to you that with the exception of a single man, they all, twenty-six of them, were compelled to again take up the catheter life which they had abandoned for from a few weeks to fifteen months. I am convinced that as a radical cure of prostatic hypertrophy the suprapubic drainage is a failure. This result or conclusion might have been anticipated by reasoning from the basis of the facts which I brought out in the pathological part

of my paper. It was there stated that hypertrophy of the prostate is a form of neoplasm or tumor. It is either a diffuse myomatous hypertrophy, or it is a localized formation of nodular myomata, except in rare instances, which were alluded to in the first part of the paper. *Myoma cannot be made to disappear by castration, neither in men nor in women, nor can it be made to do so by giving the parts in which the myomata are located physiological and mechanical rest by means of the suprapubic drainage.* I have had no chance to try the effect of castration and drainage simultaneously, and hence cannot say what the result of this treatment would be. But there is no doubt that this treatment would be justifiable. The method must be tried; it is highly improper to condemn any rational procedure a priori. As long as we claim to be working upon a scientific basis, let us not condemn methods before we have tried them.

The following table gives the results of my suprapubic drainage work and the fate of the patients so far as known to me:

Cured	1
Leading a catheter life, as before drainage.....	8
Operated on after Bottini and improved	2
Operated on after Bottini and not benefited.....	1
Operated on after Bottini and died on the third day after the cautery of septic pyelonephritis.....	1
Operated on by perineal prostatectomy.....	2
Of these one died of pyelonephritis on the fourth day after operation, the other seems to be cured.	
One patient is now being drained suprapubically for the second time..	1
Died of pyelonephritis, senile gangrene or pneumonia.....	6
Disappeared and condition unknown	4
Total	26

All of those whom I drained suprapubically were eloquent in their praises of the relief afforded to them. The patient who died of embolus was entirely relieved of his usual trouble and suffering before he died, and I am not sure that this death ought to count for much against the suprapubic operation. I regard the suprapubic drainage as the best method of giving temporary relief to those patients who are not willing or not in condition to undergo prostatectomy. The cystitis can be cured by drainage and will not always return after the drain-hole is closed.

The word prostatectomy would indicate that the whole of the prostate is removed. This has not been the case in most of the operations that have been reported. In those cases in which the whole prostate was removed, either by way of perineal section, or by the suprapubic route, or by a combination of both, the mortality has been fearful. I am unable to give reliable figures, because many of the total prostatectomies have died without being put on record. The fact which stares us in the face in estimating the value of a new operation by statistics is that only the good results are reported and the bad ones are buried. Hence, statistics based on reports of a few cases by a few men are unreliable and always misleading, because they indicate a mortality which is too low.

The results of partial prostatectomy are much better as regards mortality, and also in respect to functional improvement of the diseased organs. Thus

after a partial prostatectomy the mortality is very low, and the function of voiding urine is preserved to a degree which is entirely satisfactory. This operation is the one which I have named myomectomy. Prostatic myomectomy is the operation which I think will be adopted very generally in the future for the radical treatment of hypertrophy. The name hypertrophy of the prostate is misleading, and I would rather use the term myomatosis of the prostate. I have made sections of many specimens and parts of enlarged prostates, and even in the hardest and most resistant tumors have been able to show non-striated muscle-cells. I am convinced that the bundles of connective or fibrous tissue which we find in the sections are all derived from the connective tissue which accompanies the blood-vessels. This perivascular connective tissue surrounds the arteries and veins. It is known in biology as the lymph-sheath. All arteries and veins are surrounded by this lymph-sheath, and this lymph-sheath is continuous with the lymph-spaces around the capillaries. In my own sections I could prove that whatever of fibrillary connective tissue we find is developed from the perivascular sheaths of blood-vessels entering the prostate. The principal enlargement is made up of bundles and nodes of non-striated muscular fibers which cross each other and intermingle with each other exactly as we see them in cases of myomatous uteri. Sometimes the nodules can be easily shelled out of their beds, but oftentimes this process is very tedious, and a difficult morcellement is found to be the best way of extirpating parts of the prostatic lobes. The cases in which we find no well-defined nodules of myomatous nature, but just an even hypertrophy of the organ, all parts being equally enlarged, are uncommon. The nodular form is more frequently found. The number of cases I have examined is too small to permit of a more definite statement at the present writing.

In summing up my views on this subject an important and suggestive question arises in regard to the length of time old men may live the catheter life. Reginald Harrison and Frank Lydston state that the average length of life of a prostatic patient after he has been initiated into the catheter life is four years. Both of these men have had a large experience, and I am not inclined to doubt their statement. I know that with extreme care and under the most painstaking cleanliness, both of the person and of the catheters, two men surrounded by the luxuries of wealth have been able to live the catheter life for nine years and for eleven years, and are in good physical condition. One of these gentlemen has had several attacks of cystitis and has passed through them successfully. The other one was operated on several years ago for a stone in the bladder by litholapaxy. My own experience would lead me to place the average length of catheter life at a longer number of years, but I am not in a position to speak authoritatively on this point. At any rate, catheter life is associated with much danger and an infection may at any time take place, and even in spite of good management will often lead to pyelitis, to pyelonephritis, and to death.

Knowing the dangers of catheter life and the shortening effect it has on the duration of life, we must deliberately decide the question as to its usefulness, and we must not recommend it without great hesitation. The time when a prostatic first seeks our aid and assistance is the time when we must decide what to do. The first time a patient has retention is the time when he must either be taught to use the catheter for the purpose of drawing off the residual urine three or more times per day, or the surgeon must decide to get rid of the cause of the trouble by some other means. I believe that in the long run much suffering and

the unavoidable dangers to life and health which accompany prostatic hypertrophy can be spared to old men if right in the beginning a myomectomy is performed. The operation, if done early, before the patient's strength and recuperative powers are wasted, will be a safe one accompanied by a low death-rate.

The technique of this operation, known now as perineal prostatectomy, I shall not describe in this paper, but I will say that the operation has been frequently performed, and is highly recommended by Bryson, of St. Louis; Ferguson, of Chicago; Guiteras, Syms and Fuller, of New York. The methods which they have described and the methods of Alexander v. Dittel, Harrison and others are before us.

My operation, which I have called myomectomy, does not aim to remove the whole prostate, but merely those parts of it which have impinged upon the vesical end of the urethra, and have interfered with the function of the bladder in such a manner as to prevent complete evacuation of its contents. Myomectomy is a perineal partial prostatectomy, and its technique is practically the same as that of the perineal prostatectomies which are now before us in recent surgical literature. In order to perform a myomectomy of the prostate the capsule of this organ needs not to be removed.

CONCLUSIONS.

I. In old cases of hypertrophied prostate, palliative measures are sometimes preferable to radical measures.

II. Drainage of the bladder by the suprapubic route is preferable to perineal drainage in cases of cystitis, because the suprapubic method gives the sphincter apparatus more complete rest than the perineal buttonhole or fistula.

III. In cases of hypertrophy in which the patient's health has not been injured by chronic cystitis or nephropylitis, the dangers of myomectomy or perineal prostatectomy are minimal, and in these cases a radical and satisfactory functional result can be achieved by myomectomy.

IV. Bottini's operation must be regarded as a palliative measure, intended to enable the patient to evacuate his bladder more completely than before. It will probably have a very limited usefulness and will be crowded out of practice as the technique of myomectomy or perineal prostatectomy is perfected.

V. Bottini's operation is a dangerous operation and must not be undertaken unless most careful measurements have been made. It is often followed by extravasation of urine into the perineum, and perineal section must be done in order to save the patient's life as soon as swelling of the perineum is noticed.

VI. Myomectomy done through a perineal incision is the operation which promises the best results, and is the operation of choice. It is applicable to the greatest number of cases in which permanent cure may be expected, the kidneys being physiologically sufficient and unimpaired. The greatest dangers associated with prostatectomy are produced by injuring or removing parts of the capsule of the organ. Myomectomy must be done without this dangerous manipulation. As long as the capsule is left intact there is but little hemorrhage, and the danger of infiltration of urine and sepsis is reduced to a minimum.

TECHNIQUE OF X-RAY THERAPY.

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(ILLUSTRATED. CONCLUDED FROM JANUARY ISSUE)

A fact of the greatest importance from a therapeutic standpoint is the knowledge that individuals in good health react in a precisely similar manner to X-ray radiance. If this were not so we could not predict the effect of the radiance. Hitherto, numerous authorities have overlooked the fact that in cases of ulceration following a single exposure, this accident was due to a high intensity of the X-ray tube used—*i. e.*, the time of exposure was disproportionate to the intensity of the light. The reaction is in slight degree due to the state of nutrition of the skin, which is dependent on the age of the individual and his general condition. We are not justified in assuming an idiosyncrasy to X-rays. However, we must bear in mind that different regions of the body present a varying susceptibility—*e. g.*, the skin of face and hands is more sensitive than that of the abdomen, and the scalp may lose its hair without obvious inflammatory changes of the skin. Mucous membrane is more easily affected than skin surfaces. Application of radiance to an area of inflamed skin (*e. g.*, lupus) produces a very intense reaction.

IV. The effect of the exposure of the skin does not show itself immediately, but only after a few days or even weeks. The rapidity of reaction varies directly with the intensity of the radiance. An exposure capable of depriving the normal skin of its hairs, without inducing any but a moderate inflammation, requires about fourteen days before the first indication of an effect appears. That the period of latency is dependent on the intensity of the radiance is well demonstrated in the experiment illustrated in figure 3. The dermatitis began centrally, directly below—*i. e.*, nearest to the tube—and within the next week spread gradually towards the periphery, while centrally the process became more and more intense.

Another example of the effect is shown in figure 4, which represents a pigeon, four weeks after several exposures.

Two weeks after the last exposure all the feathers of the back fell out; later those of the breast, the neck and the cranium. The feathers of the wings, of the sides and the rump were only sparsely epilated. Most of the downy feathers, a part of the tail feathers, and the minute hairs occurring between the feathers were also lost. A fresh crop of feathers began to show itself on the neck and wings two days after the denudation of these areas, and eight days after the back began to lose its covering. The freshly sprouting feathers look like little needles (*vide* figure 4).

Undoubtedly the rays were effective, not only on the back where they impinged directly, but also at the place of their exit, on the underside of the body. This high degree of penetration, which does not obtain in mammalia and in man, is to be accounted for by the existence of air spaces and the relatively slight weight of birds.

II. PRACTICAL APPLICATION OF THE METHOD.

X-ray therapy requires a complete armamentarium consisting of: an induction coil of 30 to 40 cm. spark-length, the primary coil being connected with the electrical source (storage batteries are not practicable), an interruptor capable of

producing 20 to 40 interruptions per second, and a durable X-ray tube in which the amount of air can be regulated.

The practical lessons deduced from the foregoing theoretical considerations are as follows: A *medium-soft* tube is placed just above the part to be treated and at a distance of from 15 to 20 cm. The portion of skin which is not to be treated should be protected by a sheet of lead, 0.5 mm. thick, under which has been placed a strip of flannel to protect the skin from flying sparks. The size and configuration of the surface to be treated determine the distance at which the tube must be placed, and also whether the radiance must be directed from different points. Areas of small extent are best acted upon with the tube in proximity, whereas large, flat surfaces should receive rays coming from a greater distance. Curved surfaces, such as the face or cranium, require a radiance coming from various positions, care being taken to obtain as far as possible a like exposure throughout the entire extent. From a practical standpoint I would advise a physician always to place the tube at a certain moderate distance; to employ tubes of high intensity—"critical tubes;" to use rapid interruptions, and vary only the time of each sitting, in accordance with his judgment; thus he will easily acquire a just estimate of the efficiency of the radiance, thereby avoiding a too prolonged *seance*.



FIG. 4.

The tube used must be capable of producing a good picture of the thorax of a medium-sized man, when viewed through the fluoroscope at a distance of 60 cm. from the focus. With an interruptor giving interruptions at the rate of 20 to 30 a second, a good skiagram should be obtained with an exposure of thirty seconds. With an equipment of this description the time required for each sitting will be between five and twenty minutes. Although a five minutes' exposure will produce a slight effect, a radiance lasting twenty minutes may be regarded as the "*normal exposure*." Such an exposure will have the following results: on normal skin, after a period of latency of fourteen days, the hair will fall out, accompanied by an erythema lasting a few days; on skin affected with sycoosis the loss of hair will occur as early as the eighth day, accompanied by the formation of numerous pustules; lupus tissue will become exfoliated after a lapse of a week. We can, on the other hand, produce the effect of normal exposure of twenty minutes by dividing the action of the radiance over several sittings of shorter duration.

Taking into consideration the intensity of the radiance, the number of *seances* and the length of intermissions, we may formulate the following three methods of X-ray therapy:

1. Daily sittings, with a radiance of slight intensity, lasting five minutes, continued until the first symptoms of reaction appear.

2. (a) Sittings, with a radiance of medium intensity, twice a week until reaction begins to be manifest (about two weeks); or (b) three or four sittings, with a radiance of medium intensity, given on alternate days.

3. The "normal exposure" in a single sitting, and await reaction.

Treatment by any of these methods is appropriate and conforms to the fundamental principles laid down above. The second is the method to be preferred, inasmuch as the first is tedious for both patient and physician, and the third demands a certain experience on the part of the operator. After the first sign of reaction appears we deem it advisable to await the termination of the characteristic inflammatory process, and then, if necessary, repeat the exposure. If in using the second and third methods absolutely no reaction occurs at the end of three weeks, we may feel justified in repeating the "normal exposure;" if, however, a mild reaction, non-progressive in character, has taken place, an additional exposure, less than normal, can be applied. As stated above, the second "normal exposure" is made after the subsidence of the inflammatory reaction excited by the first; thus this treatment may involve, in accordance with the nature of the case, repetition of X-ray applications extending over months or even years.

In a very few cases of hypertrichosis, in some cases of sycosis, and in nearly all cases of herpes tonsurans and favus, a single "normal exposure" sufficed; *i. e.*, using the method No. 3; a perfect cure resulted after a single sitting.

III.

In conclusion, I wish to submit the following important facts: Radiotherapy is as beneficial in the hands of an expert as it is deleterious—nay, positively harmful—if applied by one who is inexperienced. The latter will likely induce, by overexposure, a severe ulcerative process which may extend over many months or even years, and end in a cicatrix. The physician can no longer shield himself behind a supposed idiosyncrasy of his patient. An overexposure may occur in various ways. Formerly it was customary to apply the X-ray daily over a long period until the effect became visible. If the intensity of the radiance at each *séance* was too great there was set up a severe inflammation, which grew worse in spite of the cessation of the applications; therefore, the admonition to suspend treatment as soon as severe reaction ensues is futile. The overexposed tissue will break down centrally, the destructive process extending superficially and deeply.

In like manner we must sound a warning against another method which has been advocated, namely: "Begin treatment with a radiance of low intensity and continue with gradually increasing intensities at short intervals." Great damage has been wrought in cases where the neighboring skin has not been protected by lead. It must always be borne in mind how easily an overexposure can be produced if the tube is placed too near the skin. A radiance lasting twenty minutes from eight centimeters distance is thirty-two times as intense as a radiance lasting ten minutes from a distance of thirty-two centimeters. Thus a single exposure of relatively short duration may produce an X-ray eschar.

Finally, the physician should remember to protect the skin of his own face and hands from accidental exposure. He should avoid approaching the active tube, and should remain, if possible, behind the plane of the antikathodic mir-

ror. A mask of lead may be occasionally useful. Ignorance of the practical working of the apparatus may be just as harmful as adherence to wrong principles, which are even to-day still advocated. We earnestly recommend a thorough understanding of the fundamental principles of radiotherapy, extreme caution in all manipulations, and careful experimentation on animals.

TRANSMISSION OF CONSUMPTION.

By LOUIS H. BEHRENS, M. D., of St. Louis, Missouri.

From the trend of recent reports we are almost forced to declare hereditary consumption among the rare, if at all, existing conditions. We do so, however, with considerable hesitation, and a serious doubt if it be true. Intuitively we ask of our patient presenting some lung involvement the family history with reference to consumption existing or having existed in some member of the family or blood relatives, and therefore cling with grim-like tenacity to that thought that appears so difficult to alter.

Yet, when I peruse my records and sum up my past observations, I must say that only in about one case in four could I get a satisfactory answer to my question regarding consumption being or having been in the patient's family; then in three out of every four the consumption seems only to be in the one member of the family, and that one our patient.

I have attributed this apparent inaccuracy to the fear and dread the majority have of the disease; some are thrown almost into a frenzy at the mention of the word consumption. Most people, either by accident or design rather, use terms different upon questioning; however, it is often only another name for consumption, viz., wasting disease, general debility, change of life, continued pneumonia, chronic bronchitis, chronic asthma, lung disease, etc., etc.—terms familiar to all of us; and yet superficial questioning often leaves no doubt in our minds of the real cause.

The physician, too often perhaps, keeps others in ignorance, either willfully or regretting to make its seriousness known; and in this day of industrial and other insurance, the idea seems to be that if phthisis pulmonalis is put on the health department's mortuary report, or report to the insurance company, that the policy is *nil*.

So, taking these matters into consideration, I have condoled the imperfect and rare hereditary history, by regarding some patients as prevaricators, and others as ignorant, and others still as misinformed; and tried at least to regard transmission of phthisis pulmonalis as being in many cases due to heredity, and I presume I was not the only one that really had this idea formerly.

But later investigation brought new light, which many accept and many doubt, that phthisis pulmonalis is only conveyed as a predisposing factor from parent to child, the tendency thereto, not the disease, being inherited; and so little thought was given to the hereditary transmission of tuberculosis by Koch in his valuable and astounding essay on "The Fight Against Tuberculosis," read at the British Congress on Tuberculosis, July 23, 1901, that it is dismissed with these few words, viz.:

"Great importance used to be attached to the hereditary transmission of tuberculosis. Now, however, it has been demonstrated by thorough investiga-

tion that though hereditary tuberculosis is not absolutely non-existent, it is nevertheless extremely rare, and we are at liberty in considering our practical measures, to leave this form of origination entirely out of account." (Quoted.)

Enough to stop at this and become reconciled; but another surprise bobs up serenely, in which a medical confrere asserts that tubercular ancestry seemingly renders immunity to a considerable degree, and in a study of two hundred and forty cases of consumption, twenty-four and eight-tenths per cent. gave the history of parental tuberculosis, and in sixty families with tuberculosis in the parent, in twenty-eight families of these only one of several children were afflicted; the author adds that in many no positive records could be elicited as to whether parental tuberculosis existed previous to patient's birth.

A certain immunity is proven in his general report, but the imperfect history which he claims to get as to phthisis existing before or after birth of patient leads us to feel that doubt. But then why is it that more children of each family were not afflicted, if it depended on inheritance?

Again, how can this be explained? We read, hear of, or elicit this rather peculiar history: father or mother, perhaps both, and maybe, in addition, grandparent, uncle or aunt, have had phthisis. It seems just as the children reach about a certain age, usually entering manhood or womanhood, the majority of them die of usually florid phthisis, and it is a strange fact that all prophylactic measures are thoroughly observed. In small communities it becomes village gossip: So and So has had a brother or sister die of consumption at nineteen years (say) of age; So and So is doomed seemingly and dies, but we can partially reconcile ourselves with this thought: that fear has a devitalizing effect, and just as the person hears that doomed and suspicious age, he is a fit subject for tubercular invasion and succumbs to its influence and sees only death awaiting. We find it thus in our most intelligent families where it does exist, the brightest flowers are removed, while often the fearless are spared, often classed as the no-good son or daughter. So this may be cited as transmission of consumption by fearing same.

That consumption is due most entirely to the invasion of the tubercle bacillus is proven by finding it in most every case of tuberculosis. It finds its way by inhalation, ingestion or inoculation; it requires a certain field; it becomes energetic, multiplies, involves new areas in the respiratory, alimentary, glandular and many of the bodily tissues, involving one or several or all the tissues, giving rise to the general term tuberculosis, or specified by the special area or areas involved; giving objective and subjective signs and symptoms that need no comment here; nor do we need make reference to what is necessary to create the so-styled suitable field for the propagation of the tubercle bacillus.

That human sputum is the only source of transmission of human tuberculosis is the stumbling-block to-day; that it is the main source observers admit; that it is the most virulent form, and the most frequent cause of transmission of consumption, we dare not doubt; but it is not the only contending factor in the spread of tuberculosis.

Maybe too long have we regarded dietary carefulness, inspection of the next most important agent, the bovine, as too important for serious consideration. Nevertheless, granting all differences in the morphological construction of the bovine and human tubercle bacilli, we must appreciate the fact that though Koch and others speak of the inertness as an infective agent of the bovine tubercle

bacillus on the human, yet others disagree and cite instances just the reverse; and while Koch reports very few cases of primary tubercular infection of the intestine or stomach, yet these few bespeak caution and care before entirely dismissing infected meat, milk, butter, etc., as causative factors in its transmission, though limited it be.

He cites interesting experiments in which calves, swine, goats, rabbits were fed upon human sputa infected with tubercle bacilli. The tubercle bacillus by every devisable means were placed in the atmosphere surrounding these animals, but not one became infected with tuberculosis from the human tubercle bacillus; but these same animals were treated with bovine tubercle bacilli in a similar manner, and all contracted the disease; looks odd to be infected and not be able to infect.

The experiments have not, of course, been carried out on the human in the same manner, but Repp, D. V. P., who is quoted among the investigators on this side, has compiled some extremely interesting material in the October 26th and November 2d edition *American Medicine*. He agrees with Koch in the general investigations made, and summarizes his report as follows:

1. Tuberculosis may be transmitted to animals through eating meat of certain other animals which are infected with tuberculosis, or by being inoculated with it.

2. Tuberculosis may be transmitted to animals through their ingestion of milk of certain cows which are tuberculous, both when the udder is diseased and when it is healthy.

3. The meat and milk of certain tuberculous animals contain living virulent tubercle bacilli.

He is recognized by Koch as being a very reliable investigator, being the veterinarian of the Experiment Station, Iowa State College.

Dr. M. P. Ravenel, in the September number *Univ. of Penn. Med. Bull.*, says that as the bovine bacillus has considerably greater pathogenic power than the human bacillus, for the large majority of experimental animals, and declares it justifiable to hold that this increase of virulence will also hold for man.

Delapine reports injecting of four calves with mixed sputum of human tubercular subjects: only two survived long enough to arrive at definite results and they contracted tuberculosis as a result of ingestion of, or peritoneal infection with, human sputum.

Now Crookshank believes that human and bovine tuberculosis are distinct varieties of the same disease; if the carcass is well nourished and does contain some tubercle deposits, he regards the meat as wholesome and danger practically nil.

Dr. S. V. Salmon, chief of the Bureau of Animal Industry, in a paper entitled "Report of a Committee on Animal Diseases and Animal Food," says if Dr. Koch's position is correct with reference to insusceptibility of mankind to bovine tuberculosis, it does not, by any means, follow that the products of these animals are harmless; unfortunately, this belief is being used for the sale of tuberculous meat and milk. That the diseases are not absolutely distinct is indicated by this fact: that *tuberculin* made from human tubercle bacilli causes a reaction in cattle affected with bovine tuberculosis. Concludes by saying that bovine tuberculosis has an extensive range of pathogenic power on other animals; what other virulent germ with such a range is not also virulent for man?

Virchow agrees with Koch regarding the differences between human and bovine tuberculosis, and regards Koch's assertion that human tuberculosis cannot be successfully inoculated in bovine material as being erratic in its unqualified statement, and claims that cases have come under his observation which leads him to believe that such infection is positive, no other accountable means being open.

Dr. Jesus Chico, of Mexico, claims that five out of a family of seven, to his knowledge, died from eating the infected lungs of a cow, from tuberculosis.

Dr. Demme reports four infants in the Children's Hospital in Berne that died from infected milk ingestion, from intestinal and mesenteric tuberculosis.

Dr. Ernst reports death of three children in one family of tuberculosis; the cow furnishing this milk died later, and was found tubercular; also udder involvement.

Dr. Leonhardt cites cases of two children fed from milk of tubercular cow.

And so on observers galore fill our medical literature with such facts, and bespeak the dangers from these sources.

To the credit of Prof. Koch let it be said that he does not positively assert that infection from the bovine source is impossible. I think he is often misquoted, and his assertions are exaggerated, but his thoughts lend to much leeway to those that would like to pooh-pooh the prevalent idea and profit by its downfall.

To summarize:

1. That human sputa stands pre-eminent when tubercular in the transmission of consumption.
2. That hereditary consumption is rare, and can be dismissed with passing notice.
3. That the predisposition is inherited, but that immunity is rendered to the offspring of a consumptive born during the disease of parent is far from being proven.
4. That meat, milk, cheese, butter, etc., derived from cattle and animals infected with tuberculosis can produce tuberculosis in the human being, I believe to be a fact.
5. That if laws more stringent regarding expectoration, isolation, inspection of animals, hygiene and sanitation be enforced, I sincerely think that consumption would belong to that classification of diseases as scurvy, small-pox, cholera, etc.; heard of frequently, but seldom seen.

CLINICAL REPORTS.

A CASE OF ACUTE SYPHILITIC INSANITY.

BY SIDNEY I. SCHWAB, M. D., of St. Louis, Missouri.

It is no longer a question of doubt that syphilis is an important etiological factor in the production of insanity. The most important mental affection in which syphilis plays a considerable role is undoubtedly dementia paralytica. Here the causal relation between an early acquired syphilis and the late developing mental symptoms is difficult of explanation except upon the ground of changes in the central nervous system, metasymphilitic or parasymphilitic in origin. The pathological changes are due either to the delayed action of the specific toxin upon the structure of the central nervous system, or to the effect upon the central nervous elements of the early intoxication, which renders them less stable and more easily affected by any destructive agencies to which the nervous system may be exposed. The insanities depending upon syphilitic lesions of an organic nature, such as gummata, blood vessel changes, etc., are so well known and so definitely recognized that they are seldom the subject of discussion except in unusual instances. The neuroses due to syphilis, such as the neurasthenic forms of insanity, the phobias, etc., are likewise not uncommon. An attack of acute insanity, coincident with a specific infection and amenable to the same therapy as the disease itself, is very rare, and merits attention as throwing some light upon the effect of an acute specific toxemia upon an otherwise presumably normal nervous system. The following case illustrates very well what may be termed an acute syphilitic dementia:

Wm. H., age fifty-one years, entered the nervous department of the Alexian Brothers Hospital December 14, 1901, with the following history, which was obtained from his family physician and from members of his own family (the patient himself was in no condition to add any data to it): Some time in October, the precise date being unknown, the patient noticed a small sore on his penis, involving the frenum. The origin of this sore, according to the patient's report then, was some injury received during the act of micturition. Some two or three weeks later an eruption appeared over the entire body, for which he was treated by his family physician, who correctly diagnosed the case as one of secondary syphilis. During this time the patient evidently received considerable doses of mercury. About two weeks later the patient showed the first evidences of a profound mental disturbance. These began quite suddenly with a great degree of motor restlessness and a complete amnesia. There was also tremor of the hands. At about this time the patient was brought to the hospital. When first seen he presented the appearance of a typical dement; he was unclean, there was incontinence of both rectum and bladder, due wholly to his mental state. There was a great deal of motor restlessness, which was shown by aimless wandering up and down his room. When questioned, he neither understood what was asked, nor had he the power of voluntary logical or continuous speech. He was totally unaware of his own condition, of his whereabouts, of the time, or of any events immediately preceding his attack. His speech was profoundly affected, and owing to the tremor of his lips and tongue, and to the constant dribbling of saliva from the corners of his mouth, it was almost impossible to understand the few words

which he now and then uttered. In other words, he presented a typical picture of a secondary dementia, such as might follow an attack of mania or melancholia. Physical examination showed nothing abnormal about the internal organs; the urine contained no albumin, no sugar. Over his whole body, especially marked over the abdomen and back, was a fading macular syphilide, typical in appearance and distribution. There was no glandular enlargement. The knee-jerks were slightly increased; pupils normal. Owing to the patient's mental state, it was impossible to test the sensation, but there was presumably no marked disturbance. There was no elevation of temperature. The patient was unclean and repulsive to the last degree. A vigorous antisymphilitic treatment was immediately begun, consisting of the protiodide of mercury and potassium iodide. The result of this was most striking. In four or five days there was a most marked improvement in the mental condition, and in two weeks the patient was discharged practically cured, as far as his psychical symptoms are concerned. It was interesting to note that the skin lesions disappeared at the same time, and in fact it was possible to observe a certain relation between the fading of the syphilide and the disappearance of the mental symptoms. Since that time the patient has been under observation, but has shown no evidence of a return of his former mental affection, or any physical evidence of an organic process in his brain or cord. He has absolutely no recollection of the period between the first appearance of the mental symptoms and his early days at the hospital.

In considering this case, the possibility of a mercurial intoxication was thought of, but this was ruled out by the fact that the mercurial treatment was continued more vigorously at the hospital than before, and that an immediate improvement, both physical and mental, followed.

This brief clinical *resume* is meant to illustrate two points: first, that syphilis in the constitutional stage can produce mental symptoms of a profound degree, simulating in every respect the dementias either primary or secondary to some previous mental affection; secondly, that this form of acute syphilitic insanity is strikingly amenable to specific treatment, and that a certain relation exists between the skin manifestations and the outbreak and disappearance of the mental symptoms. There is scarcely any doubt that the explanation of this mental attack is to be found in the assumption that it is due to a toxin caused by the specific infection. It is no doubt a part of a general toxemia, of which the skin manifestations form one phase and the mental symptoms another.

ABDOMINAL TUMORS.

By JESSE S. MYER, M. D., of St. Louis, Missouri,

(CONTINUED FROM JANUARY NUMBER.)

I am indebted to Dr. Carson for the opportunity to observe and report the following three cases, in his service at the Mullanphy Hospital. The operation in each case was done by him.

SARCOMA OF THE POSTERIOR ABDOMINAL WALL. (RETRO-PERITONEAL LYMPH NODES.)

J. M., farmer, age forty-six; presented no history of hereditary taint; father dying of "dropsy," the mother of "old age" at seventy. Has five children, all in good health; wife has had no miscarriages

The patient had never been confined to his bed excepting through injuries; was kicked by horses at four different times: once on the hip, twice on the ankle, and once in the "stomach" (left hypochondriac region). This last mishap occurred eight or ten years ago, and disabled him for a period of four or five months. He knows nothing of the nature of the injury sustained. There was no visible external injury, nor was there a tumefaction. He only recalls that the pain was very severe, and more or less continuous; that he vomited frequently, and that he was compelled to wear a support because of the "dragging-down sensation" which followed.

He thinks that he has never been entirely well since the injury. From time to time he has had attacks of "indigestion" and vomiting, usually brought on by overindulgence in food. The bowels have been more or less constipated throughout. At the time of this injury he weighed one hundred and fifty-five pounds.

Five or six years ago he noticed a small nodule on the lower pole of the left testicle about the size of a hazel-nut. This gradually increased to the size of a base-ball and was removed by a surgeon seven months ago. The recovery from the operation was complete. (The physician who performed the operation informed me, upon inquiry, that the growth was a solid one, having every appearance of a sarcoma of the testicle, but that the tumor had not been preserved, and sections had not been made. Judging, however, from the description of the tumor, given by both the physician and the patient, I have little doubt that it was a malignant growth of the testicle, though of slow growth (if his dates are correct).)

The patient's entrance into the hospital (November 10, 1901) was prompted by severe pains in the upper part of the abdomen, seeming to have their origin in the left lumbar region, and radiating toward the back and the left hip and thigh. At times he must "drag the left leg." His appetite is good, bowels irregular, and the appearance of the stools normal. He feels that he is gradually losing strength and becoming incapacitated for work. Present weight is one hundred and thirty pounds.

Physical Examination.—Upon deep palpation a tumor is made out in the left side of the abdomen, confined chiefly to the left upper quadrant of the umbilical region. It is apparently about the size of a goose egg, its long diameter extending obliquely from the umbilicus to the ninth costal cartilage. (Fig. III.)

It seems to have its origin along the spinal column, and in its growth has extended obliquely upward and backward. Upon deep palpation the growth can be grasped between the fingers, but is absolutely immobile. The spleen occupies its normal position, and is of normal size, there being a distinct tympanitic area between the splenic dullness and that of the tumor. The kidney cannot be palpated.

Inflation of the stomach, which proved to be in the normal position, obscured the upper half of the tumor completely, and the lower half could only be felt with great difficulty. (Fig. IV.)

The analysis of the gastric contents, removed at the same sitting, revealed nothing abnormal.

Inflation of the colon obscured completely the lower portion of the tumor. The *rectal* examination revealed no enlarged lymph nodes.

The *blood* showed only evidence of a mild secondary anemia.

The *urine* contained no abnormal constituents, though the indican was markedly increased at times.

In view of (1) the location of the tumor, viz., posterior to the stomach and colon, (2) the immobility, (3) history of a growth of the left testicle, (4) an injury, producing, no doubt, a *locus minoris resistentiæ*, a diagnosis of metastatic sarcoma having its origin in the retroperitoneal lymph nodes was ventured.

The patient receiving but little encouragement, declined surgical interference and returned to his home.

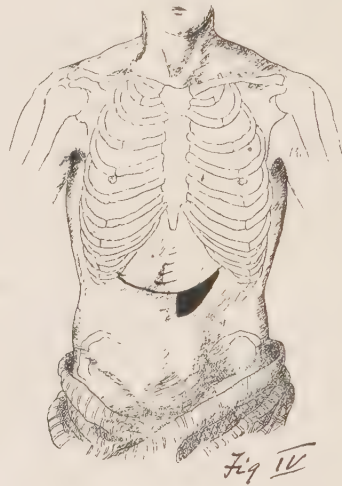
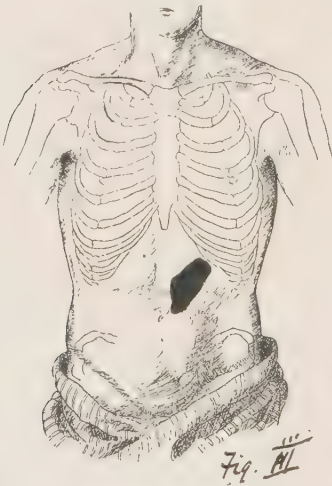
Two months later he came to the hospital, with all of his former symptoms

greatly exaggerated, and now requested an operation as a last resort. The tumor had grown rapidly and was now about the size of a child's head, occupying the same relative position. The complete localization of the tumor seemed to justify an attempt at removal.

The incision revealed a somewhat fluctuant, exceedingly vascular tumor, solidly anchored to the posterior abdominal wall by a wide base along the spinal column. An effort to remove the entire growth was futile because of the excessive hemorrhage produced upon splitting the capsule. The mass removed was of a gelatinous consistency, and proved to be, upon microscopical examination, small round-cell sarcoma.

Though the exact origin of the growth could not be determined, there seems little doubt but that it was from the retroperitoneal lymph nodes.

The patient recovered nicely from the operation and is still living.



CARCINOMA OF THE PYLORUS AND LESSER CURVATURE OF THE STOMACH, WITH A METASTATIC GROWTH IN THE RIGHT LUMBAR REGION, SIMULATING A MOVABLE KIDNEY.

J. C., Scotchman, fifty years of age; dentist. Mother died of "tumor of the stomach;" also an aunt. He claims to have been in perfect health up to two months ago. About this time he felt a hard mass in the right side, and simultaneously developed symptoms of "indigestion," loss of appetite, vomiting, etc. Sensations of bloating and fullness occurred after eating; vomiting every two or three days. There was practically no pain. His usual weight was one hundred and sixty-five pounds. Both weight and strength gradually declined. The vomiting became more frequent, occurring every day, usually early in the morning. The vomitus was very sour, both to the taste and smell, of a dark brown color, very copious, often containing particles of food taken on the previous day. He noticed, at no time, pure blood. The bowels have been quite constipated during the illness; appetite has remained good throughout. Cares little for meats.

At the present time (January 18, 1902) he weighs one hundred and thirty pounds. He retains practically nothing that he eats more than a few hours. He has the impression that none of the food "passes through," but, on the contrary, that he expels more than he ingests. Is too weak to be about; has frequent attacks of palpitation of the heart, headaches, etc.

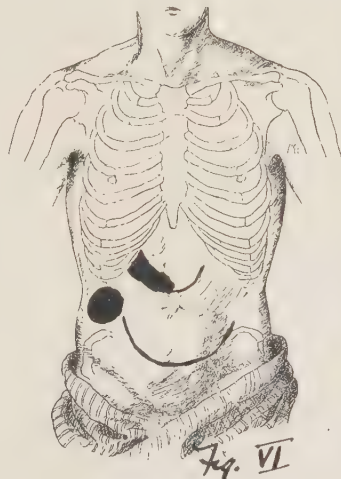
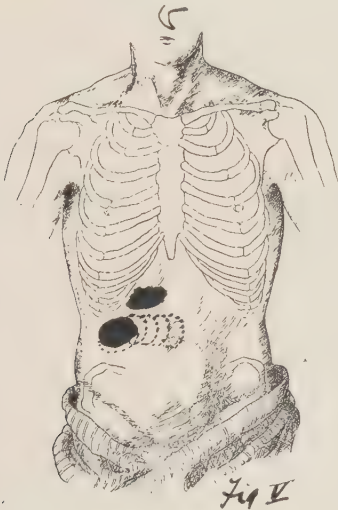
Status Præsens.—The patient is greatly emaciated, eyes are sunken, thorax long and slender, expansion poor. Cardiac sounds and dullness normal, pulse ninety, small and soft. The skin and mucous membranes are pale and livid and extremities cold. Enlarged lymph nodes in the groin (none in the supraclavicular space), no edema.

The abdomen is slightly distended and rather tense. A mass is easily distinguished in the epigastric region, extending from the median line to the cartilage of the ninth rib (right). It seems about one and one-half by three inches. It is slightly movable, both upon respiration and to manipulation. (Fig. V.)

When the patient relaxes his muscles the mass can be grasped between the fingers. There is an area of tympany between the tumor and the liver dullness. The inflation of the stomach carries it downward.

The stomach is greatly displaced and dilated to the extent indicated in Fig. VI.

Another mass is felt in the right lumbar region, just below the free margin of the ribs. In size and shape it corresponds to the kidney, being longer in the horizontal than in the transverse diameter. Can be pushed forward by pressure from behind. Upon deep inspiration it moves downward about an inch, but



cannot be forced upwards under the ribs. On bimanual palpation it is readily grasped between the fingers. It is easily forced to the left, and even falls to the median line when the patient lies on the left side (Fig. V.). Inflation of the colon first pushes it slightly to the left, and then obscures it entirely. It apparently has no connection with the liver or gall-bladder.

The urine contains no abnormal constituents, and has never contained blood.

Analysis of the Stomach Contents.—Ewald test breakfast, removed one hour after ingestion, amount 600 cc., of a mushy consistency, brownish color (coffee grounds). Sour odor, acid in reaction, free HCl. negative, lactic acid positive, in large quantity, peptogenic power fair, etc., etc. The microscopic examination revealed large numbers of long, non-motile bacilli (probably Oppler-Boas), oil globules and muscle fibers (from butter and meat eaten on previous day), plant rests, few starch granules, and yeast cells (not branching).

There was no doubt as to the nature of the tumor in the epigastrium, viz.: carcinoma of the pylorus and lesser curvature of the stomach. The diagnosis was based on the following points: (1) The sudden development of the symptoms, rapid emaciation, etc.; (2) the size and position of the tumor; (3) the dilatation of the stomach, and stagnation of the gastric contents following stenosis of

the pylorus; (4) absence of HCl. acid, and presence of large quantity of lactic acid.

There was some doubt, however, as to the nature of the tumor in the right lumbar region. Its size, shape, consistency, mobility, position behind the colon, etc., led to the supposition that it was the kidney retained in such a position through adhesions. The possibility of a concomitant or metastatic carcinoma of the posterior wall of the colon was also considered.

In order to relieve the stagnation of the stomach contents, brought about by a complete stenosis of the pylorus, a gastro-enterostomy was done. The patient did not respond to rectal feeding, gradually declined, and died within a week, the result of inanition.

The post-mortem revealed a carcinoma of the pylorus, lesser curvature and posterior wall of the stomach; the lesser curvature being involved in about half its extent, and the posterior wall correspondingly. The stenosis of the pylorus is complete and, consequently, the stomach immensely dilated. The cauliflower



FIG. VII.

excrecence had grown into the lumen of the duodenum, dilating it to about the size of a hen's egg. The gastric lymph nodes of the lesser curvature are decidedly involved, varying from the size of a pea to that of an egg. The anastomosis between the stomach and the jejunum is patent, and union complete. There is no evidence whatever of peritonitis.

The tumor in the right lumbar region, which had been mistaken for the kidney, proves to be a fluctuant, metastatic growth about the size of a man's fist. It rests just behind the splenic flexure of the colon, and is attached through ligamentous bands and adhesions to the pyloric end of the stomach. The colon passes directly over the tumor, and is firmly adherent to it. The colon itself, however, is in no way involved. The chief interest of this case lies, not in the rarity of the primary tumor, but in the position of a metastatic growth and its clinical resemblance to a movable kidney.

[TO BE CONTINUED.]

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EDITORIAL COMMENT.

THE ST. LOUIS MEDICAL SOCIETY.

One of the most gratifying signs of the times, medically speaking, is the flourishing condition of the St. Louis Medical Society. The newly elected officers are a unit in the effort to make this venerable organization a worthy representative of the World's Fair city. It is indeed gratifying to note that the high class of papers presented, the lively discussions and the increased attendance are repaying the earnest attempt of these men in the right direction. As president, Dr. Carson has shown care and foresight in choosing the heads of committees, the men on whom the work of the committees seems always to fall.

With the executive committee rests the fate of the society for the time being, for its labors determine whether or not the meetings shall be interesting, since they prepare the programme. In this regard much can be said of the innovations which this committee has instituted. Not content with living from hand to mouth, as the expression goes, these three gentlemen have made out a schedule of all the meetings between now and the summer vacation, and have by persistent effort secured valuable papers for most of the meetings, though months ahead. Not content with this, a circular letter has just been sent to all the members, urging them to redoubled efforts at production, attendance and discussion. Profitable discussions have been assured by a system of appointing gentlemen of known ability along certain lines to open the discussions on subjects appertaining thereto.

The pathological committee was formerly regarded as simply an ornament to the society's catalogue, and appointment thereon as merely a warrant of the appointee's ability; now it is different. Dr. Carson announced in the beginning that he appointed this committee to work, and for no other reason. As at present conducted, specimens are presented before the society and, when the member has no objections, turned over to the pathological committee for examination and report, before a discussion can be held. After this report has been handed to the executive committee, a place for report and discussion is made on the programme, if this latter committee considers the matter of sufficient value. Thus the time of the society is never taken up by the discussion of a specimen which may possess no importance warranting the same.

As an evidence of the willingness and desire of the body to encourage scientific work, a sum of money has been set aside for the purchase of a microscope; a most commendable expenditure it would seem.

Dr. A. E. Halstead, the Chicago surgeon, was present and took part on the programme of a recent meeting, at the invitation of the president, Dr. Carson; and in the visitor's remarks were found the inspiration for fresh work. It will be agreeable news to the fraternity in St. Louis that money has been set aside to defray expenses, and that arrangements are now in progress which will insure our hearing, at no distant date, one or more of the lights of the medical profession in America.

The officers of the old St. Louis Medical Society are sparing no efforts to make it the equal of any similar organization. Will not the profession in this city rally as one man to their support?

A NEW SURGICAL OPERATION.

The entrance of surgery into the treatment of diseases heretofore considered purely medical marks a new epoch in that branch of the science. Kidney decapsulation for chronic Bright's disease is now before us.

Novel as was Harrison's announcement of treating acute nephritis by incising the kidney capsule to remove the compression of the organ due to the unyielding nature of the capsule to the acute swelling of the parenchyma, yet rather startling was the venture of Edebohls in attacking chronic nephritis surgically.

Edebohls (*Med. Rec.*, December 21, 1901) first began by noting that cases of nephritis in loose kidneys were much improved and even cured after nephropexy. In the beginning this was regarded as a natural consequence of the fixation, but later he came to the conclusion that the decapsulation of the kidney was the acting cause. (In doing his nephrorraphies he dissected the proper capsule of the kidney away from the organ.) Having arrived at this conclusion he operated directly for chronic Bright's disease by removing the proper capsule of the kidney and cutting it away from the organ. The good results come not from the relief of tension, but from an improved blood supply. The denuded kidney, which is vascular, comes directly in contact with the fatty capsule, which is liberally supplied with blood vessels.

While Dr. Edebohls has operated without a death, we cannot expect the same happy results to follow every operation, or in the wake of every operator. A man with kidneys much damaged is on the brink of death, and any operative procedure is liable to have a fatal termination through shock. To damaged kid-

neys is due most of what mortality prostatectomy has, and plays an important role in any operation on the urinary apparatus. Time and experience only can show what cases may be benefited or are suited for the operation.

The proceeding may be considered extremely radical, and, no doubt, it will be difficult to convince a patient who has no more symptoms than those which occur in many cases of chronic interstitial nephritis to submit to a surgical undertaking of the magnitude of kidney decapsulation. Yet, if further experience bears out the good results reported by Dr. Edebohls, he may well consider himself the benefactor of a large number of incurables. But we will have to take with caution good results reported in chronic nephritis, especially interstitial nephritis. Some of these cases run such an extended course, lasting from fifteen to twenty or more years, and pass through such a variation of amelioration and exacerbation, that reports of improvement have to be considered in connection with the natural cycle of the disease. Interstitial nephritis, too, may at times be so latent that it is extremely difficult to detect, thus simulating a cure, and at another time in the same case, due to some exciting cause, present a urine loaded with kidney elements.

However this may be, we cannot but commend the temerity of the operation.

THE PATHOLOGY OF INFANTILE ATROPHY.

Many authorities still doubt the propriety of admitting marasmus (infantile atrophy) in the classification of infantile diseases. It has been asserted that marasmus is not a specific disease, but merely a symptom of a great variety of pathologic affections. Thus, tuberculosis, syphilis, chronic suppuration, and chronic pneumonia are given as the cause. But it must be admitted that the most common variety depends on some gastro-enteric lesion. Some content themselves by calling this form gastro-intestinal catarrh, or chronic enteritis.

The question has its many sides, but after excluding all these diseases, a disorder remains which lacks the positive clinical characters of a chronic enteritis. There may be little or no diarrhea, food is taken ravenously, and yet the infant wastes. Until more is known concerning the intricacies of tissue anabolism these cases are conveniently grouped under the term marasmus.

Baginsky makes this disorder really a specific disease, in that he gives it a characteristic pathologic anatomy. He claims that degeneration and atrophy of the greater portion of the duodenal and jejunal mucous membrane exists in these cases. Here and there are normal patches, but the abnormality of structure is everywhere patent. Overgrowths of villi, destroyed villi, increased connective tissue, irregular cells, and destruction of the glandular layer may readily be demonstrated.

Moreover, he has found that only about one-half of the nitrogen of the food is absorbed, the remainder being excreted with the feces. From this pathological view the impression is obtained that marasmus is a sequel of a severe intestinal infection that leaves destructive alterations in the absorptive cells of the small intestine.

This view has been combated by Fede, Heubner, and others, in that they have failed to find these intestinal lesions in some fatal cases of marasmus, but Baginsky has answered that those exceptional cases were really cases of inanition.

Czerny and Kellar have offered the theory of acid intoxication to explain the

atrophic symptoms. Kellar found an increase of ammonia in the urine, and from this it was inferred that more acid enters the body and the ammonia is formed to neutralize this excessive acidity. The acidity arises from a decomposition of the fats and carbohydrates. Ingenious as this theory is, it has been almost hopelessly upset by the careful investigation of Pfaundler and others, so that it may almost be disregarded.

It has been suggested that marasmus is a trophoneurosis, the atrophy being entirely due to certain changes in the nervous system, and Mueller has reported extensive changes in the cells of the brain and spinal cord, degenerate in character and depending on a previous gastro-enteric intoxication. It is conceivable that a degeneration of certain trophic cells may cause extensive atrophy.

Thus, while the theory of Baginsky is corroborated by the clinical history, it is obvious that the pathology is yet unsettled.

TEN MILLIONS FOR MEDICAL RESEARCH.

Poverty, ignorance, vice and disease are the four great barriers to the progress of civilization and the propagators of misery. Poverty is largely the result of vice or vicious habits. The physicians who have visited the homes of the honest sons of toil know this. They see the beer can, the waste, the laziness, the vice. Ignorance is inexcusable where there is desire to learn, but absolute ignorance is usually the result of the vicious waste of opportunity, or of disease. Vice, the result of disease either acquired or born of tainted parentage—tainted in the sense of being physically diseased. Therefore, we must, no doubt, look to disease and its effects for a large per cent of our misery, our poverty, ignorance and vice. The philanthropists chuck their millions at libraries, churches, universities, hospitals, etc., and as a new aspirant to philanthropy appears upon the field there looms up in his wake immense structures, solid monuments, stuffed with books, dotted with white beds or sprinkled with yearning students, all comfortably decorated with the usual red tape.

Libraries are of great benefit, yes; man should read, he should learn. Hospitals, yes; hospitals are necessary, and are sometimes quite charitable, have free beds for those who need them, even though the needy one does not belong to the same religious denomination.

Colleges, universities, yes; there are plenty of places to learn, and learn we must. Churches, great monuments to God, the minister, the philanthropist, the architect, the artist. Millions in an artistic base for a graceful spire. Poverty knocks not at its classic doors, but disease stalks therein.

Libraries, universities, churches—all of these are elevating and of individual benefit to the race; but none of them are directed in their energies to the study of the greatest propagator of vice or misery—disease.

The institution to which man must look for his emancipation from these curses is one which is armed with a few of these millions of money and earnest workers ready to battle with this greatest monster, with minds trained for the struggle and free from the cares of the existence struggle—an institution for the study of preventive medicine.

How many such institutions have we in the world? How many in this country? Endowed institutions where men of science can spend their entire time in proper study. How much relief has the world obtained from the work of men

like Pasteur, Roux, Koch! There rocks in the cradle to-day many another who can and will bring his boon to man, if the opportunity is offered him.

The world is liberally supplied with libraries, colleges, churches, etc., but it needs—ah, so wofully needs—a few millions which will give to eager and tireless scientists a moderate living, but plenty with which to pursue their investigations. Five—nay, ten—millions for the study of disease and its prevention!

GOVERNMENTAL CONTROL OF THERAPEUTIC SERA.

An article under this caption appears in the Public Health Reports for February 15, 1902, written by Past Assistant Surgeon H. D. Geddings, of the United States Marine Hospital Service. The first sentence of the article well expresses the thought embodied in the title: "In view of unfortunate results attending the use of diphtheria antitoxin in one city and vaccine virus in another, there have been numerous suggestions looking to the control of these materials and analogous products by the National government, and the propositions have received a certain amount of comment of a favorable nature." Geddings then quotes the laws in the French, German and Russian governments, where the manufacture of antitoxins is officially controlled by rigid examinations of [all therapeutic sera offered for sale.

While endorsing without any qualification the government inspection of all such material, it is questionable whether the step is feasible under our present system of government. It might be possible to have the National government see to it that the municipal manufacture of antitoxins is carried on in the proper manner and that the products are scientifically tested. It is notoriously common that incompetent officials are vested with the power in many municipalities of manufacturing therapeutic sera, but it is equally well known that the most extreme care and precision is exercised by all the commercial firms engaged in this industry in this country. It is rather a sad commentary that the municipal official should be charged with incompetence, where the "commercial scientist," if the expression be permitted, is thorough and exact, yet it is nevertheless a fact, as has been proven in the recent St. Louis catastrophe. The municipal manufacture of antitoxin should certainly have a regulating factor connected with it, and that factor might well be the National government through one of its departments, notably the United States Marine Hospital Service. We would therefore suggest to this department the advisability of taking steps looking towards the control of the municipal laboratories now engaged in the manufacture of therapeutic sera, and that the commercial houses be allowed to continue in the same trustworthy, scientific manner as heretofore, without such inspection. Certainly the names of the men who have control and supervision over the commercial biologic departments throughout the country stamp their products with a degree of excellence that could not well be improved upon even by the men in the National government employ. We admit that in the countries abroad conditions are peculiarly appropriate for National control of therapeutic sera, but in these United States of America it is really questionable whether the same control would be either appropriate or practicable, save in the manner indicated.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

The Diagnosis of Inflammatory Processes Having Their Origin in the Cecum and Vermiform Appendix.—(URSCHMAN, Leipzig (*Muenchener Medicinische Wochenschrift*, Nos. 48 and 49, 1901).—In a majority of cases it is possible to differentiate between those cases of appendicitis with so-called fibrinous exudation and those with abscesses, even in those cases in which the nature of the fluctuation, the temperature curve, and the puncture fail to differentiate between them.

The non-purulent cases are characterized either by a total absence of leucocytosis or by a very slight increase of the leucocytes in the beginning, returning again to the normal. A marked increase of the leucocytes without the existence of pus occurs only in the beginning of the disease. The leucocyte count is then at the very most 20,000 to 22,000. If the leucocyte count increases in the very beginning, or gradually increases to a high figure, and other processes (pneumonia, etc.) can be excluded, it is certain that pus exists and that surgical measures are necessary. Leucocyte counts of 25,000 and over are at once suspicious. If this number remains permanent for some time, the diagnosis is certain and delay unnecessary. After the abscess has been thoroughly opened and emptied, the number of leucocytes sink rapidly to the normal. If they do not decrease, it is reasonably certain that pockets have been overlooked. A like decrease in the number of leucocytes follows a spontaneous rupture of the abscess into a hollow viscus.

The leucocyte count is by far more reliable than the temperature curve as a diagnostic aid. The temperature curve in purulent cases may vary greatly; there may be much or little fever, in fact it may be absent entirely; while the leucocyte counts show no such inconstant results.

Degeneration of the Islands of Langerhans of the Pancreas in Diabetes Mellitus.—WRIGHT and JOSLIN (*Journal of Medical Research*, November, 1901).—In the examinations of the pancreas from nine cases of diabetes mellitus, the islands of Langerhans were found involved in two. The changes were the same as those described by Opie and others, consisting essentially in the presence of a hyaline eosin-staining substance in the form of irregularly shaped masses varying in size, the larger being several times as large as an epithelial cell of the island. The hyaline masses do not seem to be continuous with the walls of the capillaries, and in very rare instances lie outside the limits of the islands. The general relations indicate that the changes occur through a transformation of the epithelial cells. The author concludes that the occurrence of marked pathological changes in the islands of Langerhans in two out of nine cases of diabetes mellitus is in favor of the hypothesis that lesions of these structures are important factors in the pathology of the disease. Further observations must determine whether the lesions will be found to be always associated with glycosuria. The history of the nine cases examined are reported here in detail.

Concerning Lumbar Hernia and Related Conditions.—BORCHARD, Berlin (*Berliner Klinische Wochenschrift*, Nos. 49 and 50, 1901).—The points at which lumbar herniæ are most frequent are (1) the triangle of Petit, (2) Lesshaft's space, and

(3) the points described by Lieber. These seem to be the points of least resistance. There are four groups of cases, viz.: those due to trauma, those following abscesses, those of spontaneous development, and those of congenital origin. According to the existing literature, the true congenital lumbar hernia is due to defective development of the ribs and abdominal muscles. It is necessary to differentiate from these the hernia-like ectasia of the abdominal walls, the herniæ spuriae, or pseudo herniæ, which are due to atrophy of the muscles.

This differentiation has a practical as well as a theoretical interest. The lumbar herniæ are properly treated through the radical operation, while ectasia of the abdominal wall must be treated conservatively. The author has collected nineteen cases of traumatic origin, nineteen of spontaneous development, five following abscesses, and ten congenital cases.

Cystic Liver.—CLEAVER (*Philadelphia Medical Journal*, December 28, 1901) reports a case of cystic liver in a man eighty-one years of age. The patient, who was rapidly declining, supposedly the result of his extreme old age, had an enlargement in the right hypochondrium, attributed to the liver. Two weeks before his death there was noticed an elevation of the surface, about the size of an egg and similar in shape, located one and a half inches to the right of the median line and about the same distance below the ribs. It was fluctuating in character and not painful to pressure. A diagnosis was made of distended gall-bladder. The post-mortem, however, showed this to be one of a number of cysts in the liver. They varied from the size of a walnut to that apparently of a base-ball. The gall-bladder contained twenty-six calculi.

A Wire Director for the Stomach Tube, with an Arrangement for Removing Particles from the End of Tube When Obstructed.—CLEMM, Darmstadt (*Muenchener Medicinische Wochenschrift*, December 10, 1901).—In view of the frequent obstruction of the end of the stomach tube by solid particles, and the incompetency of the various methods introduced for overcoming this difficulty, the author has invented a means which he considers in every way satisfactory. When the tube becomes obstructed he introduces a cup-like arrangement on the end of a copper wire, which cuts off and removes the offending particle. This avoids the necessity of having to remove and reintroduce the tube a number of times during the expression of the stomach contents or a stomach washing,

Treatment of Chronic Round Ulcer of the Stomach.—FUETTERER, Chicago (*Journal American Med. Association*, January 11, 1902), discusses various theories concerning the etiology of round ulcer of the stomach, and concludes that they can only form when there is a certain amount of hemoglobin lacking, and that it must heal when the hemoglobin percentage is increased. On this theory he bases his treatment. As soon as the diagnosis of ulcer of the stomach is made, or when it is suspected, the percentage of hemoglobin in the blood is determined. The patient is put to bed, in the care of a trained nurse. The patient then gets the juice of five pounds of beef daily, in order to bring the percentage of hemoglobin up to normal as soon as possible. The author recommends a special method of preparing the beef juice. Prepared beef extract does not give the desired result. About a pint is obtained by the method described. After the percentage of hemoglobin becomes normal, the patient gets nothing to eat for five or six days. During this time rectal-nourishing enemata are given twice daily. The results of this treatment have been gratifying. Early gastro-enterostomy is recommended in cases of stenosis of the pylorus produced by the scar of an ulcer, in order to reduce the danger of the development of carcinoma.

Gastroptosis in its Relation to Hyperchlorhydria and Tachycardia.—ROSE (*The Post-Graduate*, December, 1901) lays much stress upon the importance of

splashing sounds in the diagnosis of disturbance of motility of the stomach. Elsner's recent work, in which he undervalues this symptom, is a mass of contradictions. Splashing sounds elicited only during normal digestion, mean simple atony; those produced when digestion should be ended, mean motor insufficiency; and those produced in the mornings, before food or liquid has been ingested, indicate dilatation of the stomach. The presence of this symptom often renders the introduction of the tube unnecessary. The author reports a case of gastropotosia associated with hyperchlorhydria presenting the usual symptoms. The use of the adhesive plaster strapping and the proper diet caused the symptoms to disappear readily. Gastropotosia as a logical factor in the production of cardiac neuroses, especially tachycardia, is discussed. The author's experience is as yet too limited to enable him to give definite information on this subject. He states, however, that gastropotosia is sometimes the cause of typical paroxysmal tachycardia, and trusts that, since attention has been directed to this possibility, systematic observations will be made.

Gastric Hyperesthesia and its Management.—STOCKTON, Buffalo (*Journal American Med. Association*, January 11, 1902).—The term "hyperesthesia" is often improperly used. It should be applied to sensory states analogous to cutaneous hyperesthesia. There is a class of patients presenting symptoms resembling those of hyperchlorhydria, and yet examinations of the gastric contents prove that they are not identical. It may be found that the standard of hydrochloric acid is even below the normal. The author's observations lead him to the conclusion that there is no fixed standard of acidity. This depends in each case upon the personal equation. What appears to be the normal acidity for one is superacidity for another. In these cases it is possible to increase the tolerance of the stomach for free hydrochloric acid by merely improving the general health of the patient. It is necessary to make frequent analyses of the stomach contents. In this way the gastric activity may be kept at the highest point compatible with comfortable digestion and within the limit of gastric tolerance. In the treatment of these cases the diet is of prime importance. Beginning with a very bland diet, it should be gradually expanded up to the point of toleration. Antacids are very useful. The continuous and faradic currents also give happy results in the treatment of gastric hyperesthesia.

Movable or Floating Kidney a Cause of Acute and Chronic Painful Dyspepsia.—MACGREGOR, London (*Lancet*, December 14, 1901).—The systematic examination of the abdomen in cases of chronic painful indigestion, especially in women, will frequently show that the trouble is not in the stomach itself, but that the disturbance is due to the wanderings of a dislocated kidney. So long as there is no interference with the functions of the kidney itself, no symptoms point directly to nephroptosis. A movable kidney may produce a variety of symptoms. In one of the cases here reported an acute attack of jaundice, with sickness and severe pain in the epigastrium, was produced; in another it produced symptoms simulating cancer of the stomach, viz.: pain in the region of the pylorus, emaciation, an icteric tint of the skin, etc. The great frequency of movable kidney is attributable to tight lacing plus muscular effort. Cases are cited in which muscular exertion while tightly laced precipitated gastric disturbances afterwards found due to movable kidneys.

A History of the After-Progress of Five Cases of Partial Gastrectomy for Cancer of the Pylorus.—MORISON (*Lancet*, January 11, 1902).—CASE I.—A woman, forty years of age, lived three years and two months after the first operation, a pylorectomy.

CASE II.—A male, forty-eight years of age, survived two years and two months after the operation

CASE III.—A woman, aged forty-one years, died one year and three months after the pylorotomy was performed.

CASE IV.—A male, aged thirty-eight years, lived two years and eleven months.

CASE V.—A male, forty-one years of age, lived but six months.

Tumor of Hair, Weighing One Pound Seven Ounces, Two Feet in Length, Removed from the Stomach of a Woman, with Recovery.—BRUCE (*The Canadian Practitioner and Review*, November, 1901) reports a case of a hair tumor in the stomach of a woman twenty-six years of age. It was first noticed during pregnancy, and was supposed to have some connection with the uterus. After labor the tumor was found to lie in the upper part of the abdomen, being about twelve inches in length. Tumor of the spleen, stomach, omentum or kidney was considered among the possibilities. It could be moved up or down and from side to side, and was quite hard. Aside from the patient's knowledge of its presence, the tumor had caused no symptoms. She had never even been nauseated, and had a good appetite throughout. An exploratory incision was made, and the mass removed through an incision four inches long in the stomach. The tumor was found to consist entirely of hair, twisted and intimately woven, and was exactly the same shade as that of the patient. Single hairs were dissected out twelve inches in length. The mass was twenty-four inches long. The patient claimed that she had never swallowed her hair. Though she was not hysterical, the author has no doubt but that she swallowed it.

SURGERY.

IN CHARGE OF

WILLARD BARTLETT, M. D.

Twenty-five Cases of Gastro-Enterostomy for Non-Cancerous Affections of the Stomach Susceptible of Cure by this Means.—PANTALONI (*Archives Provinciales de Chirurgie*, November, 1901).—This series is remarkable for the fact that only one of the patients was lost, and this was, as we are assured, not the fault of the surgical procedure. The operation done was that of Roux, the "Y" operation; and, as the inventor of it claims, it is the only one to be chosen where the patient can stand a slightly longer operation than the others, it being the only one which can fully re-establish the function of the stomach. Twenty-four of this series of patients not only recovered, but more can be said—they actually have no stomach symptoms from their former benign stenosis; a fact for which the method deserves all the credit (the "Y" method). Pantaloni enters a vigorous plea for the same care in anatomical observation of the stomach and surrounding tissues during operation that is bestowed upon the uterus and adnexa; by this means alone can we gain the same definite indications for operation and consequently the same operative results which the surgery of the female genital organs now furnishes. The splendid article closes with the full histories of all the author's twenty-five cases.

Mechanical vs. Suture Methods for Intestinal Anastomosis.—FRANK (*Annals of Surgery*, January, 1902).—A number of separate points are mentioned in proof of the superiority of the Murphy and Frank couplers over other forms of intestinal anastomosis. Such an operation is said to be more simple, time is saved, peritoneal surfaces are uniformly coapted, hemorrhage is arrested by the button, the scar does not contract unduly, less danger of infecting peritoneum at time of

operation, not much shelving, reduction of mortality, and not so many adhesions in vicinity. Many of the disadvantages to which others have called attention in this connection are left unmentioned by our author.

Symptoms and Therapeutics of Cervical Ribs.—BORCHARDT (*Berliner Klinische Wochenschrift*, December 23, 1901).—There are but two cases in the literature, which relate the occurrence of two such supernumerary ribs on one side. Four types are described, according to the extent of the new body; the author's four cases belonged to the most frequent kind, that in which the rib ends free or unites with the ordinary rib. We are interested in this structure especially on account of its intimate relation to the brachial plexus and the subclavian artery, though it must be said that it causes no symptoms, in *most* cases, in spite of its delicate situation. In five per cent. to ten per cent. of all cases, however, there exists a typical symptomatic picture, consisting of the peculiar finding on the neck, disturbance in circulation and characteristic nerve derangement. The rib can be felt and seen in a radiograph. The circulation is disturbed in the following manner: The subclavian cannot let enough blood through, so the pulse grows less and the arm white, especially marked when inspiration occurs, because the vessel is compressed by the rib at this time. Finally, the vessel develops an aneurism or becomes thrombosed.

The nerve disturbances cause the patient most suffering, however. There are neuralgic pains, various hyperesthesias, ataxia, and degeneration. All these symptoms may develop slowly and without known cause, or they may be first noticed after an injury, and from the day of the same grow worse. Death has occurred in no case, and the circulatory disturbance may be helped in the usual ways; but for the nerve trouble so much cannot be said. Only sixteen such cases have been operated upon, four in the Bergmann clinic, and of them three with brilliant result.

Spasmodic Torticollis and Its Surgical Treatment.—HAMANN (*Buffalo Medical Journal*, December, 1901).—The author says that the disease which may commence in the sterno-mastoid of one side finally can spread to all the posterior muscles of one or both sides. Indeed, any portion of the motor apparatus of face, neck or arm may become affected. An interesting feature of the malady is that it comes in a group of muscles which have been overused in a certain way. For instance, a locomotive fireman contracted the disease on the left side, after turning his head constantly to the left for years. Section of muscles involved and of the nerves supplying them is the only remedy which offers hope of a cure. Bilateral section of muscles does not interfere with turning the head or holding it erect. Two successful cases are reported.

A Case of Myositis Ossificans at the Neveau of an Amputation Stump.—KATZ (*Le Progres Medical*, No. 33, 1901) relates a case which from its extreme rarity becomes doubly interesting. After an amputation for accidental injury to the leg the stump became so sensitive that a neuroma was suspected. Six months after the operation an examination of the part was absolutely impossible, so intolerable was the pain provoked by the slightest pressure. At the most sensitive spot there was noticed a hard plaque which gradually increased in size until not a trace of soft tissue could be found at the end of the stump. In this mass the end of the bone seemed to lose itself, but on the operating-table was found to be separate and distinct from it. The author leaves it an open question whether or not shreds of periosteum left in the wound produced the growth, or whether the case is one of true myositis ossificans such as is seen after rupture of a muscle, etc

The Technique of Gall-Bladder and Duct Operations.—MIXTER (*Annals of Surgery*, January, 1902).—He compares the indications, in pain and other symptoms, around the gall-bladder to those around the appendix. Drainage should be instituted in every bladder that has been opened, unless it be removed. This is done by Mixter by placing a flanged glass tube in the gall-bladder and tying a string around it, the whole being packed around. A rubber tube is now inserted and the contents drawn off continuously into a container beneath the bed.

When the ducts are opened the author does not advocate primary suture—still he says the Halsted hammers will be of great aid to one who attempts it. He uses the Murphy button in those cases which require that an anastomosis be made between colon and gall-bladder.

Pre-Oral Intubation.—KUHNS (*Centralblatt fuer Chirurgie*, December 28, 1901).—The author's main idea seems to be to furnish more than the usual quantity of air to the patient than he would otherwise gain when going badly in narcosis. Again we are often in the need of help in many operations on tumors on the neck, etc., when the air passages may be compressed or displaced. The author takes up next a description of the instruments which he has used in this connection, the chief of which is a flexible metal tube. This can be cleaned during the narcosis in much the same way as is the tracheotomy tube. The three chief indications for the operation are: in thyroid extirpation, in cases where blood and other fluids must be kept from running into the larynx, and in cases that require air to be blown directly into the lungs in order that a patient who no longer breathes may be revived.

Treatment of Prolapse of the Rectum.—A. E. HALSTEAD (*Medical Sentinel*, November, 1901).—The article opens with description of the four forms of the disease. In acute or recurring prolapse, reposition can be accomplished unless strangulation has occurred; then amputation must be done. In other chronic cases ventro-fixation can be of much avail. The author takes up in detail the technique of these two operations, and gives in a concise manner the indications for each.

He has operated on six cases of his own with successful outcome. In two he did a Whitehead operation, in one removed a polyp, in two ventro-fixation, and in one other made a complete amputation. The various authorities have been liberally quoted, with a result that the article is rich in information contained.

Sudden Dislocation of the Hip in the Course of Acute Rheumatism.—GEVAERT (*Journal de Chirurgie et Annals de la Societe Belge de Chirurgie*, No. 11, 1901).—Collection of fluid in the joint cavity as well as relaxation of the muscles and tendons around the same are responsible for the accident. They can reduce themselves spontaneously and may remain in place. No subjective symptoms occur and the trouble is noticed only when the part is viewed. The more recent the dislocation the better the definite prognosis; and indeed it may be said that the prognosis is better in this complication of typhoid than it is in rheumatism, for in the latter disease there is a pathological process going on in the joint, hence the formation of new deposit in the cavity is rendered easy and rapid.

Although the prognosis, as far as topography is concerned, is good, still the author has seen bad final functional results, for the reason just stated. In a case reported he succeeded in replacing the part sixteen months after the accident, and obtained a favorable result as far as function is concerned.

The Cause of Stitch Abscesses and Their Prevention.—MAYNARD (*Annals of Surgery*, January, 1902).—The author's experiments have shown that the skin, on which approved sterilization has been attempted, will still infect culture tubes most liberally. This was accomplished by squeezing out the contents of sebaceous

and sweat glands. We must look for infection from such a source at the wound edges or along the course of stitches. The first can, in a measure, be obviated by accurate coaptation and the obliteration of dead spaces; but as to the latter, by rubbing in oleate of mercury. Maylard managed either to sterilize or retard germ growth in a number of skin specimens, hence concludes that stitch abscesses can be prevented by rendering aseptic by inunction deep skin layers that must otherwise escape our efforts. Clinical experience justified his belief.

Permanent Results of Intestinal Exclusion.—WIESINGER (*Deutsche Zeitschrift fuer Chirurgie*, Bd. 62, Hft. 1 und 2).—Two cases are reported, the same being, on account of their age, of particular interest, the two having been operated upon six years before. The first was a tuberculous tumefaction of the cecum, with fistula: but after the exclusion the patient gained rapidly, and now considers herself cured. There is still a little mucus coming from the fistula, but it gives her no trouble.

The second case was one on which the operation had been done for chronic colitis. In this case a fistula was made for therapeutic purposes; it closed, however, after six weeks, leaving the individual in a most satisfactory state, which still continues at the time of writing. Experiments have shown that complete exclusion is dangerous and likely to burst open; still there has existed the unique condition of complete exclusion in this last-named patient for six years. This possibility is explained by our author by the fact that a fistula existed for six weeks after the operation, and that mucous secretion had so diminished before the spontaneous closure of the same as to be no longer a matter of danger.

Intestinal Perforation Following Strangulated Hernia; Peritonitis; Operation; Recovery.—MORESTIN (*Bulletins et Mémoires de la Société de Chirurgie de Paris*, Tome 28, No. 1).—This terrible accident occurred as a result of taxis, so the author makes this subject the lesson of the hour. Until it becomes the rule to operate at once on strangulated cases, we will continue to see the various misfortunes which make this disease so dangerous. In the case reported, a man had suffered forty-eight hours and then called in a doctor, who reduced the mass with great force. In a short time there appeared the symptoms of peritonitis, and at a hurried operation the perforated gut was sutured, then the cavity packed. The patient made a satisfactory recovery in spite of his condition. Two more cases were referred to, of which one recovered and the other died; however, the author concludes that far the greater majority of such patients are certainly lost. The perforation may be the direct result of the taxis practiced on a gut whose vitality has been impaired, or one may reduce by force an intestine in which perforation has already occurred. However that may be, the result is equally bad in the two cases.

Hepatic Drainage.—DEAVER (*Philadelphia Medical Journal*, December 21, 1901).—The pathology of gall-stone disease closely resembles that of appendicitis. The initial step is a catarrh of the bladder or ducts, and the disease may not be suspected until the patient is far advanced in it. The disease has a tendency to progress rather than to become self-limiting, and when symptoms do occur finally, they are the result of adhesions around the small viscus, or else the result of defective drainage: hence, our success in treating the disease is directly proportionate to the success we may have in making effective drainage. Operations must be done early, for if such patients are neglected they become icteric, and are then exposed to great danger, no matter what the manner of procedure. If there be any serious change in the gall-bladder, it is to be removed; hence, it is seen that not only the pathology of the disease can be likened to appendicitis, but the treatment, if it is to be effective, likens itself to that of appendicitis as well.

A Case of Partial Resection of the Spleen With Use of Steam as a Hemostatic.—SNEGUIREFF (*Archiv. fuer Klinische Chirurgie*, Bd. 65, Heft 2).—Experiments on animals have resulted to the author's satisfaction, and led him to try the above named method on the human. He uses a sort of distributor of the steam instead of the direct jet, in most cases, as the force of the latter washes out the pulp from between the more resistant portions of the organ. In this manner all the bleeding which he encountered during the resection was immediately checked except that which came from two central vessels of about the size of the radial artery; on them he was forced to turn the direct jet, when they at once ceased to bleed. Pressure with the hand as well as gauze tampon had proven insufficient to quiet them. After the resection the spleen was fixed to the abdominal wall, and the tumor found to be an angioma cavernosum. The patient made a perfect recovery.

Retro-Peritoneal Hematoma; Laparotomy; Recovery.—PAUCHET (*Gazette des Hopitaux*, January 9, 1902).—When an injury to the abdomen affects the region above the umbilicus, the surgeon usually contents himself with an exploration of the stomach, liver and biliary passages. This is often insufficient, as the following case proves. The patient had been a sufferer from obscure abdominal trouble for two or three years, and presented a mass between stomach and colon, the same being free from liver and spleen. The tumor could be seen to increase in size day by day, so an abdominal section was determined upon. At the operation there was found a large quantity of blood, filling the lesser peritoneal sack; after this had been cleaned out a spurting vessel was discovered, but this stopped upon pressure for a few minutes. In concluding, the author makes a few remarks on the pathology and diagnosis of hemorrhage, of which he considers this case an example.

A History of the After-Progress of Five Cases of Partial Gastrectomy for Cancer of the Pylorus.—MORISON (*The Lancet*, January 11, 1902).—The first operation was done in October, 1897, and the patient remained well till May, 1900, when digestive symptoms commenced. A tumor was felt and a second laparotomy performed. However, the case proved inoperable this time, and the woman died in December following, three years and two months after the first operation. The second patient was operated upon in September, 1898; he remained perfectly well until February, 1900, when his old symptoms recurred and he died in November of the same year; that is at the expiration of two years and two months after operation. Patient No. 3 lived but one year and three months after her pylorus was removed. No. 4, two years and eleven months after the same procedure, and No. 5 expired six months after the attempt to prolong or save his life. The report can be pronounced very favorable to the author's skill and judgment, when we take into consideration the nature and course of the disease if left to itself and unchecked.

THERAPEUTICS.

IN CHARGE OF

WALTER BAUMGARTEN, M. D.

Serum Therapy of Typhoid Fever.—CHAUTEMESSE (*Presse Medicale*, November 20, 1901).—Chautemesse reports the results of the employment of the anti-typhoid serum, the method of production of which he published in 1898 at the Congress at Madrid. From January 1st to October 10, 1901, he employed it in

one hundred cases of typhoid fever, in Paris hospitals, choosing by preference severe cases, with a fatal result in six cases, a mortality of six per cent. He contrasts this with the total mortality of twenty-nine per cent. in 371 cases, treated in Paris by routine methods, and occurring during the same period (January 1 to October 10, 1901) as his own cases, and attributes the difference to the efficacy of the serum.

The injection of the serum is followed by a more or less prompt fall in the temperature. This, however, depends greatly upon the previous duration of the disease, the severity of the infection, the resistance of the patient, and the dose of the serum. Granting that the dose of serum be adequate, the number of days the disease has existed forms the best index for its course after injection. Injections on or before the seventh day are followed within four or five days by a fall of temperature to normal, a coincident improvement in the rate and character of the pulse and in the general well-being of the patient. After the eighth day the typhoid bacilli have too firm a hold, and the effect of the serum is usually greatly delayed; the temperature remains high for several days, drops slowly, and remains slightly above normal for some time; pulse and general condition improve with the fall in the fever, but do not become normal; so that in severe intoxications it may be necessary to repeat the injection before the desired effect is produced.

When the serum has been employed late in the disease, relapses, or at least recrudescence of the fever, may occur, and are to be carefully guarded against. The explanation of these relapses lies in the fact that the patient has not developed his own antitoxine, and has only partially resisted the disease by means of the serum which in time (eight to twelve days) is excreted. The bacilli which have resisted the action of the serum and prolonged the disease are presumably the most virulent, and provoke a relapse, which may be considerably more severe than the original fever. Such a relapse should be promptly met with a second injection before the fever reaches its fastigium.

The length of the fever, therefore, is greatly shortened by the serum, and depends largely upon how early in the disease the serum treatment is instituted.

The effect of the serum in the general condition appears in twenty-four to thirty-six hours, and consists in a disappearance of the headache, in a feeling of well-being, and a better color. Diarrhea usually disappears in two or three days after the injection. Changes in the pulse follow the effect on the temperature. In cases which are treated very early in the disease, the pulse-rate may fall abruptly to sixty or fifty-five per minute. The blood pressure may rise from 120 to 130 mm. (of mercury) before the injection to 170 to 180 mm. three or four days after the injection. The action of the serum on the temperature depends on the severity of the infection. In mild cases a moderate rise of temperature, a few hours in duration, follows the injection, after which it steadily declines. When the infection is severe and general, the serum causes a rapid destruction of a great number of organisms, the substance of whose bodies throws a great mass of toxic material into the circulation, which maintains or increases the fever for a number of days. This should be controlled by the systematic employment of the cold bath.

The urine increases in quantity almost immediately after the injection of serum, and may reach a daily output of three to four liters. The chlorides of the urine do not, however, increase to normal quantity until convalescence is established. Febrile albuminuria gradually disappears; the serum itself never causes it. The blood changes immediately after injection consist in a leucocytosis, with a diminution and disappearance of myelocytes, a reappearance of eosinophiles, and an increase in mononuclear leucocytes; in time the leucocytes resume their normal proportion.

The complications observed in this series of cases may be tabulated as follows: three cases of intestinal hemorrhage, all of which recovered; one case of

perforation, which died; three cases of otitis media, which recovered; two cases of slight phlebitis of the saphenous vein, which recovered; one case of pneumonia, which died.

The injection of the serum is neither painful nor irritating. The point of election for the injection is in the forearm near the bend of the elbow, and is chosen on the ground that the venous network is better developed in this region and the serum is, therefore, more rapidly absorbed. Care should be taken not to introduce the needle into a vein. In the 100 cases on which this report is based the only sequel of the injection was a slight erythema without increase in the fever, in two instances.

In the early stages of the disease, from the eighth to the twelfth day, the quantity of serum to be injected is ten to twelve c.c. in robust individuals. If after eight to ten days the temperature remains stationary and slightly elevated, or shows a tendency to rise, a second injection of four to five c.c. may be given; should a relapse occur, the dose of the injection must be determined by the height of the fever and the general intensity of the reinfection, provided twelve c.c. be taken as a maximum dose. The initial dose of ten to twelve c.c. may be reduced under the following conditions: (1) When a case is seen within the first five or six days; (2) when it is seen later in the disease or when the intoxication is profound. In the second instance, to avoid greatly increasing the toxins in the blood, injections of six to eight c.c. may be made and repeated at intervals of a few days. The effect of the serum on the temperature should always be very closely watched.

On the Action of Digitalis.—CUSHNY (*Medical News*, January 11, 1902).—Cushny before entering upon his subject proper, gives the following brief history of the use of digitalis and investigations into its action until the last ten years. Digitalis was discovered by Withering, of Birmingham (England), in 1785, who applied it in cases of dropsy, which he failed to recognize as of distinctly cardiac origin, but clearly differentiated from what appears to have been cases of ovarian cyst, in which, he says, digitalis is of little avail. Digitalis became rapidly popular, and in 1830 its chief usefulness was definitely shown to be in cases of cardiac disease. Traube in 1851 studied its effect on the heart and circulation in experiments on mammals, which yielded two results proving (1) the slowing of the pulse, and (2) the rise in the blood pressure. The slowed pulse is due to increased activity of the inhibitory center in the medulla; the increased blood pressure is due in part to an increase in the amount of blood expelled from the heart, in part to contraction of the peripheral vessels, which obstructs the flow of blood from the larger vessels into the capillaries. It was also shown that it is questionable whether digitalis produces any contraction of the pulmonary arterioles. In working on the active principles of digitalis, Schmiedeberg, in 1882, found three bodies which acted on the heart in the same way as digitalis, and which he named digitoxin, digitalin and digitalein; other inactive bodies accompanied these three, one of which he named digitonin. Recently Kiliani described a fourth body, digitophyllin, which resembles digitoxin, and showed, further, that all the active principles of digitalis belong to the group of glucosides.

The slow pulse and the increase in blood pressure obtained by the manometric methods instituted by Traube are also frequently obtained after administration of drugs such as strychnia and caffeine. By various recent methods, therapeutic doses of digitals have been shown to be followed by slowing of the heart, an increase in the strength of its contractions, and an increase in the dilatation of its ventricles. The slow pulse is not due to a direct action upon the heart, for it disappears when the cardio-inhibitory center is paralyzed by atropine. The increased dilatation of the heart—that is, the greater relaxation of its muscle fibers—also proves to be due to the action of the cardio-inhibitory center, and likewise dis-

appears when this is thrown out of action by atropine. The only feature which remains is the increased strength of contraction, which is, therefore, a direct action of digitalis on the heart muscle. Such increased strength of contraction tends to make the cavities of the heart smaller than before—that is, to drive out more blood.

One might suppose that this increased output of blood at each contraction would be counter-balanced by the reduced frequency of the beats, so that no more blood would be driven out per minute than previous to the administration of digitalis. But direct experiment has shown that the increase in efficiency amounts to from twenty to thirty per cent. in normal animals. When larger quantities of the drug are given, and poisoning is produced, the output falls below the degree of efficiency existing before the drug was given. Investigations on hearts isolated from the body and fed mechanically, and therefore severed from the cardio-inhibitory center, have shown that the only effect of digitalis is an increase in the strength of contraction.

The essential disturbance in cardiac disease is a more or less serious interference in the ability of the heart to move an adequate quantity of blood in a given time from the veins to the arteries. The accumulation of blood on the venous side of the circulation leads to starvation of the tissues and organs of the body, the heart itself included, so that the inefficiency of the heart leads to its own malnutrition, and this to its further loss of strength, and in this manner forming a vicious circle. "The effects of digitalis on the heart muscle are exactly those adapted to counteract this condition. The contraction is increased in strength, and probably the dilatation is slightly increased in diastole, although this is much less marked in the dilated heart than in the normal one. The increased contraction augments the output of the heart, and raises the pressure in the arteries, thus accelerating the flow through the capillaries." "The quickened circulation supplies a more adequate supply of food and oxygen, and improves the nutrition of the vessels and organs, and chief among these of the heart itself, which becomes equal to its task." . . . Where the heart is permanently injured by a shrunken valve, "the heart muscle has a special burden to carry in order to maintain equilibrium, and increases in bulk. The hypertrophy of a muscle can occur only when it is put in the most favorable conditions of nutrition, and the hypertrophy of the heart is induced not through any direct stimulation of the growth of the muscle by digitalis, but by its nutrition being improved by the changes in the circulation which are sufficiently explained by the increased contraction of the muscle fibers."

The improved nutrition of the heart in cases of dilatation and malnutrition, after digitalis has been given, favors the return of the rapid pulse-rate to normal, as well as the direct action of digitalis itself.

Digitalis acts directly upon the heart in increasing its regularity, as has been proved by Gottlieb on an excised heart with a constant source of nutrition, so that neither cardio-inhibitory center nor nutrition came into question.

The contraction of the arterioles produced by digitalis may tend to keep more blood on the arterial side, and undoubtedly aids the action on the heart in cardiac inefficiency. Cushman thinks that this may justify the persistence of the profession in the use of digitalis in preference to strophanthus, which has the same action minus the contraction of the arterioles.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

R. B. H. GRADWOHL, M. D.

A New Method of Staining Nervous Tissue.—T. KODIS (*Archiv. fuer Mikroskopische Anatomie und Entwicklungsgeschichte*, Bd. 59, Heft 2, issued November, 1901).—T. Kodis has given us, in his new method of staining, a promise of a better knowledge of the microscopic anatomy of the nervous system than we now have. He states in the beginning of his article that the Golgi method of staining nervous tissue depends for its action upon the affinity which exists between silver and mercury salts and nervous elements. In other words, a chemical union is formed between the metallic salts in question and the albuminous body of the nervous tissue. The question arose in Kodis' mind whether this reaction could not be brought about more quickly than obtains in the case of the following out of the technique of the Golgi stain. He tried several salts, and finally arrived at the conclusion that mercuric cyanide, $\text{Hg}(\text{CN})_2$, was the ideal salt for this work, being a fixing and penetrating agent at one and the same time. The next question was to find a suitable staining agent to be used in connection with this fixing material. Delafield's, Ehrlich's, Boehmer's, Meyer's and Apathy's hematoxylin, acid fuchsin, carbolfuchsin, gentian violet, anilin oil-gentian violet, methyl violet, methylene and anilin blue solutions, etc., were all tried without success. Some good pictures were obtained with polychrome methylene blue. Molybdic acid-hematoxylin was found to be the quickest and best agent for demonstrating the integral parts of the nervous tissue after preliminary fixation in the mercuric cyanide solution. The technique must be changed to bring out different parts of the nervous tissue, but for the general demonstration of the gray matter of the brain, for instance, the staining of the ganglion cells, the following technique should be carried out:

1. Fresh material (not older than twenty-four hours after death) is cut into pieces one-half to one centimeter thick, and immersed in a saturated watery solution of mercuric cyanide for from one to two days, often for a longer period.

2. The pieces are put directly into 10 per cent. formol solution, one to three days, without washing off the mercuric cyanide solution.

3. Sections are cut with the freezing microtome.

4. Stain the sections one to two minutes in molybdic acid-hematoxylin of one-fourth the strength of the prepared solution. Molybdic acid-hematoxylin is prepared in the following way:

R Hematoxylin crystals	1.0 grammes
Pure molybdic acid anhydrit. (Merek).....	1.5 "
Aqua dest	100.0 "
H_2O_2 or a crystal of HgO	0.5 "

Sig.—This solution can be used on the day following its preparation.

5. Wash in water one to two minutes.

6. Contrast stain with alcoholic solution of light green.

7. Absolute alcohol, xylol, Canada balsam.

The protoplasm of the ganglion cells is stained gentian violet; the dendritic processes and the beginning of the axis cylinders likewise, the smallest branches blue violet. Usually the nuclei are not at all stained or appear darker than the protoplasm. In the contrast stain the nucleus appears green, while the smallest branches look greenish.

The neuroglia fibers of the white matter appear reddish, the nuclei of the neuroglia cells are dark red, while the protoplasm is not stained or is stained green. The neuroglia fibers of the gray matter are not stained, while the neu-

roglia nucleoli are stained red. In paralytic subjects, so far as Kodis has studied, he has found that the neuroglial fibers of the gray matter are stained, especially in the stratum zonale, where in normal brains they are to be seen.

The axones are stained violet as far as the myelin sheaths. The myelin sheaths are not stained. If one can procure very fresh human or animal brain matter, it will be found that the axones of the white matter are stained also.

If it is desired to imbed the sections in paraffin or celloidin, it is best to stain *en masse*, as alcohol changes the staining character of the tissue and injures the finest branches of the dendritic processes. For this purpose use small pieces, two to three millimeters thick, and put them two or three days in 1:20 solution of the molybdic acid-hematoxylin, or, still better, in Mallory's phosphormolybdic acid-hematoxylin, 1:20 solution. Then place the section directly in alcohol, and, after hardening in the usual way, in celloidin or paraffin. The staining agent does not penetrate deeply, yet many good sections can be obtained in this way. The phosphormolybdic acid-hematoxylin gives good polychrome-staining pictures. The nuclei are mostly blue, the protoplasm a light red, the smallest branches violet, and the Nissl bodies are unstained. The pigment of the ganglion cells assumes an orange-red color. The chromatin substance on the nucleus is plainly visible. The nucleolus, and very often the nucleolulus, are blue. Pieces of spinal cord which have been fixed in the cyanide of mercury and stained *en masse* in the Mallory solution, show the ganglion cells stained with their dendrites a burgundy red, the axones a lighter red, the myelin sheaths light blue, the neuroglia fibers dark red. In general it can be said that the peripheral parts of the specimens with which the stain comes readily in contact are stained red, while the central parts, which are not so accessible to the stain, are colored blue.

Isolated parts of the spinal cord can be stained very well if the tissue is fixed in the way described, cut with the freezing microtome and stained with the Haidenhain ferric-hematoxylin. The procedure is carried out in the following way:

1. The sections are put for two to five hours in two per cent. iron-alum solution.
2. Wash in water.
3. One-half per cent. watery hematoxylin solution, ten to twelve hours.
4. Treatment in two per cent. iron-alum solution one to three hours, under microscopic control, until the tissue is decolorized and only the remains stained dark blue.
5. Wash for several hours in water.
6. Alcohol, xylol, Canada balsam.

The methods of staining for the ganglion cells and the nerve sheath can be combined, first by staining with the Haidenhain procedure, and then with the molybdic acid-hematoxylin.

Fibers containing no marrow are stained heavier, and up to this time Kodis has found no isolated stain for them. They can easily be stained, but other tissue elements are stained with them, and that destroys the picture. Pieces of tissue are cut with the freezing microtome and the sections are put into diluted and slightly warmed molybdic acid-hematoxylin for from one to two minutes. The sections are stained completely dark or black red. For decolorizing they should be put in two to four per cent. iron-alum for from two to three hours, until the color of the sections becomes light red. Then follows thorough washing in water and the usual after-treatment. The finest fibers are brought out in this way; for example, those of the submucosa and mucosa.

The Golgi methods and their modifications have the greatest significance in the progress which has been made in studying the microscopic structure of the brain. Relatively speaking, they have not had much of an influence on the progress of pathologic findings in the brain. Inasmuch as they stain only certain parts, it is not possible to get a composite picture of the anatomy of the

brain from one staining process. Each process brings out certain units. We must make a number of preparations in order to bring out the fully complete picture. We must make a composite picture from the sum of the units thus brought out. We never know positively, in the face of a pathologic condition of the brain elements, just what the changes are, for the reason above given. That it is also impossible in some cases to recognize artificial appearances, we also know. Kodis trusts that his method will help alleviate these defects in our technique, because he believes that with this technique we can obtain a positive picture of the changes in brain tissue, not an elective one.

The Pathology of the Adrenals.—ERNST ROSENSTEIN (*Arbeiten aus dem Path. Anatom. Institut zu Posen*, 1901).—Rosenstein made a series of observations on the adrenal bodies in one hundred post-mortem examinations conducted at the pathologic institute in Posen. He noted that cavity formation was present quite often—in thirty cases out of the total one hundred observed. The cases in which the cavities occurred were tuberculosis, pneumonia, severe degrees of arterio-sclerosis, heart lesions, and cases in which there was a stagnation of blood in the lower abdominal organs. He concludes that this cavity formation in the adrenal bodies is not a post-mortem change, nor is it an evidence of putrefaction, because it occurs in cases that are opened up shortly after death, and in cases in which there are no other evidences of putrefaction. The cavities are the result of stagnation of blood in the circulatory system, particularly in the lower abdomen; especially in connection with an inflammatory condition on the borderline between the cortical and medullary portions of the suprarenal capsule. These inflammatory changes in the suprarenal capsule are either of an exudative or of a productive variety.

Another group of cases studied by Rosenstein were Addison's disease, clinically and pathologically. He noted in the first case of Addison's disease which came to autopsy tuberculosis of the lungs, thickening of the plexus solaris and adhesions between it and the suprarenal capsule. The adrenal was also caseous, and the right was in the same condition—adherent to the vena cava.

The second case showed on post-mortem examination caseation of the left suprarenal capsule, the right one showing more calcification than caseation. The heart was in brown atrophy; slaty induration of the lungs and tuberculosis of the bronchial and tracheo-bronchial lymph nodes. There was no involvement of the solar plexus, as in the first case. A third case showed about the same picture as the second. In a fourth case total caseation of the suprarenal capsule was observed, although no clinical signs of the Morbus Addison were noted on account of the severe tuberculosis which overshadowed everything. A fifth case was found to have intestinal and pulmonary tuberculosis with caseous nodes in both adrenals.

Rosenstein follows out the postulate of Lubarsch, in believing that the bronze skin is not necessarily a symptom of Addison's disease; that we can have the pathologic-anatomic signs of Addison's disease in the adrenals without having had the clinical picture of *diabete bronze*; that, in short, the pathologic-anatomic designation for this affection should be that devised by Lubarsch, namely, "cachexia hypernephropriva."

Serotherapy of Typhoid Fever.—CHANTEMESSE (*La Presse Medicale*, November 20, 1901).—Chantemesse is one of the pioneers in the serotherapy of typhoid fever. He began his investigations in 1892, together with Widal. His first results were entirely negative, for the reason that the immunization of animals was made with living or dead cultures of the bacillus typhosus. The consequence was that a protective agent was obtained, but not a curative one. In 1898, Chantemesse reported at the congress of medicine in Madrid his success in obtaining a soluble active toxin of the bacillus typhosus. As a result he succeeded

in manufacturing a potent antitoxin which, he claims, has marked curative effects on the disease enteric fever.

In this article he reports a number of cases successfully treated in the Paris hospitals by means of this antitoxin of typhoid fever. Cold baths were employed at the same time. He says that the effects of the serum are the same in man as they are in the lower experimental animals, viz., an increase in the phagocytic power of the blood, with a destruction of the microbic life present. It reduces the fever and exercises a marked remedial effect on the severity of the nervous symptoms. Chantemesse insists that the cold water treatment should be used coincidentally, that water should be imbibed in abundance in order to flush out the kidneys, etc.

The report is the most enthusiastic one that has yet been presented in regard to the serum therapy of typhoid fever. The clinical histories appended with the article seem to confirm the promising words of the essayist. It certainly offers an incentive for others to follow along the same lines.

The Occurrence and Habitat of *Anopheles Punctipennis* and *Anopheles Maculipennis* in the Valley of the Androscoggin.—EDWIN O. JORDAN (*The Journal of Medical Research*, January, 1902).—Jordan states that the attempt to prevent malarial infection by combating the particular kind of mosquito that forms the intermediate host of the malarial parasite is not likely to meet with even moderate success unless fortified by a complete knowledge of the development and ecology of the various members of the incriminated genus. One of the most hopeful measures for diminishing malaria lies in the discovery and reproduction of the natural conditions hostile to anopheles. These conditions must exist, else anopheles would be more generally distributed than it is. The notes taken by Jordan during one summer's observations are recorded by him in the hope that they may be found useful in further comparative studies.

His historical note shows that malaria began in New England, in the southern part, and has gradually extended northward. The extreme northern part of New England has escaped this disease. The observations made by Jordan took place in the neighborhood of the town of Shelburne, New Hampshire, in the valley of the Androscoggin river, and near the Maine border.

Very few winged insects belonging to the genus anopheles were found during the entire season. The adult anopheles was never found in the neighborhood of its breeding place. The house occupied by the writer was the object of special search, since most species of the anopheles are semi-domestic and tend to congregate in dwellings. In the course of the whole season only six specimens of the anopheles punctipennis were captured in and about the house as against seventy-four specimens of culex.

The larvæ of anopheles were also observed by Jordan. The larvæ were collected in the outfit recommended by Nuttall, Cobbett and Strangeways-Pigg, consisting of a white enameled dipper of 600 c.c. capacity, a wide-mouthed pipette and collecting bottles. At Shelburne the anopheles larvæ were so scarce that only one was found in about twenty dips. The other extreme was at Randolph, where as many as twenty-one anopheles larvæ were found per dip. Although freshly reared female anopheles were confined in breeding jars under what appeared to be favorable conditions and were fed with human blood, bananas and blueberries, they did not lay eggs in captivity. Very young larvæ died before reaching the pupal stage. The older larvæ behaved better, and some developed into pupæ and hatched. Thirty larvæ and pupæ of anopheles punctipennis collected at intervals throughout the season gave birth to eleven male and nineteen female adults.

The anopheles are surface-feeders and derive their sustenance from the plankton. In this respect they differ from the culex larvæ, which are able to browse over the bottom and get their food in large part from the bottom ooze, as

well as from the floating life. It is no accident, therefore, that malaria has been observed to prevail along river bottoms and sea coasts. Accumulations of surface water are not apt to be the breeding places for anopheles larvæ, for the reason that there is insufficient nutrition. For genera able to range more freely in their search for food than the anopheles larvæ, such places are good breeding places.

GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF

HUGO EHRENFEST, M. D.

Amputation of the Cervix; Injurious Consequences of This Operation.—M. GRAEFE (*Muenchner Med. Wochenschr.*, No. 22, 1901).—Graefe considers this operation really indicated in comparatively few cases only. The most frequent untoward symptoms met with subsequent to this procedure are the following: (1) Ectropium of the mucosa of the cervix, later inflammation and ulceration; (2) stenosis of the external os, producing delay during parturition, dysmenorrhea or sterility; (3) excessive reduction in the size of the cervix, predisposing to a retrodeviation of the uterus; (4) parametritis and perimetritis posterior in cases where sutures were passed through the connective tissue or the peritoneal covering of the *cul-de-sac* and suppuration occurred.

Sterility.—R. CHROBAK, Vienna (*Wiener Klin. Wochenschr.*, December 17, 1901).—In this essay the writer lays special stress upon one symptom which heretofore has been entirely neglected in connection with this question. He found as a frequent cause of sterility certain conditions which bring on an immediate escape of the semen after cohabitation. These conditions are: hyperactivity of certain muscles, relaxation of the vaginal walls, and defects in the perineum. He obtained good results with plastic operations, especially when combined with splitting of the posterior lip of the cervix. In his opinion, the too ready escape of the semen may alone offer an indication for operation in cases of retrodeviation of the uterus.

The Treatment of Ectopic Pregnancy.—E. IHM (*Zeitschrift fuer Geb. und Gyn.*, vol. xvi., No. 2).—The author reports the results obtained in thirty-nine cases, nineteen of which were treated by operation, twenty conservative. The immediate results were in both categories satisfactory, but differences of great practical importance were shown in the remote results. While all the operated patients were enabled to do their work four weeks after operation, in the non-operated patients it was necessary to continue treatment for many months or even years. This experience tends to prove that operation is to be preferred.

Ovariectomy in Pregnancy; Three Recent Cases.—JOHN B. HELLIER (*Lancet*, December 21, 1901).—Giving the reports of three successful cases of his own, operated upon at the third, fourth and sixth month of pregnancy, respectively, the author states, in conclusion: Ovariectomy is now recognized as the best treatment for almost all cases of pregnancy complicated by ovarian tumor. The mortality of the expectant method was found by Remy to be 23 per cent. for the mother and 39 per cent. for the child. The mortality in cases in which the pregnancy has been terminated for the presence of ovarian tumor was 22 per cent. in 125 cases collected by Dsirne. On the other hand, the mortality of ovariectomy in pregnancy, performed with modern precautions, is estimated at 5.9 per cent. by Dsirne, 8.4 per cent. by Weiss, and 4.09 per cent. by Vinay. The best results

for the child are obtained by operation between the third and fourth month. Even double ovariectomy has yielded good results for the child. In seventeen cases there were only two abortions and three premature labors.

Prognosis and Indications of Ovariectomy During Pregnancy.—E. ORGLER (*Archiv. fuer Gynaek.*, vol. lxx., No. 1).—In Professor Landau's clinic in Berlin ovariectomy was performed during pregnancy in ten cases. All patients recovered. In four cases abortion occurred after the operation. In a compilation of one hundred and forty-eight operated cases the author calculates a mortality for the mothers of 2.7 per cent. A premature interruption of the pregnancy was observed in 22.5 per cent. of the cases. In his opinion the prognosis of the operation is better in an early stage of pregnancy.

Tuberculosis of the Tubes and Uterine Mucosa.—R. KUNDRAT (*Arch. fuer Gynaek.*, vol. lxx., No. 1).—One hundred and forty specimens extirpated on account of inflammatory conditions were examined. Tuberculosis of the tubes was found four times; tuberculosis of the endometrium but once. In one case there was a tuberculosis of the tubes co-existing with a carcinoma of the cervix; in this instance in an extirpated lymphatic gland both carcinomatous and tubercular changes were found. [Penrose says in his "Text-book of Diseases of Women" (1901, page 395): "During the past three years Dr. Beyea and I have found tuberculosis of the tubes present in eighteen per cent. of the cases that were subjected to the operation of salpingo-oophorectomy for inflammatory disease of the tubes. It may be said, therefore, that tuberculosis is present in from eight to eighteen per cent. of all cases of inflammatory disease of the uterine appendages."—ED.]

The Formation of Metastases in the Ovaries in Cases of Primary Carcinoma of Other Abdominal Organs.—E. KRAUS, Vienna (*Monatschr. fuer Geb. und Gyn.*, vol. xiv., No. 1).—The author takes into consideration only the cases in which there are found metastases in the ovaries, the location of the primary carcinoma being in an abdominal organ far remote from the ovaries, such as the stomach, gall-bladder, etc. In these cases we seem justified in excluding the usual mode of dissemination by way of the blood or lymphatic vessels. A more satisfactory explanation is offered by the theory of Recklinghausen, viz., that in these instances particles of the primary carcinoma have found their way through the abdominal cavity, and have finally invaded the ovaries by penetrating their epithelial cover. A strong justification is given this theory by the result of a careful examination made by the writer in five cases. He examined three cases of primary carcinoma of the stomach, one of carcinoma of the cecum, and one of the ductus choledochus. In each case metastases were found in various abdominal organs besides those in the ovaries. In all instances microscopical examination revealed the fact that the malignant growth was progressing in the ovaries in an inward direction, the peripheral areas always showing the carcinoma in its earliest stage of development. The excellent blood supply of the ovary, its hyperemia, and the lesion of its surface at the time of rupture of a Graafian follicle, offer the contaminating carcinoma particles good opportunities for further development. It is of the greatest importance from a clinical standpoint to carefully examine the ovaries in all cases of carcinoma of the stomach, gall-bladder, etc., and *vice versa*, to search for gastric symptoms if a malignant growth is found in the ovaries, as the latter may be but a metastasis. In an appendix to his essay the author gives the results of experiments made in animals in regard to the possibility of invasion of the ovaries by small particles. He injected a solution of India ink into the abdominal cavity of rabbits and was able to find granules of the ink in the ovarian tissue forty-eight hours after the injection.

PEDIATRICS.

Acute Hemorrhagic Nephritis Complicating Influenza.—MILTON MILLER (*Arch. Ped.*, January, 1902).—Forty cases of influenzal nephritis taken from literature are analyzed and one case is reported. The author's case was an infant thirteen months old. The infant presented typical symptoms of influenza, high fever, coryza and cough. On the next day persistent vomiting and slight diarrhea began. Five days later suppression of urine and slight edema of the limbs appeared. Examination of the urine gave the following result: Color, red; strongly acid; albumin, 0.5 per cent., by bulk; no sugar or bile; microscope—abundant red-blood cells, leucocytes, renal epithelium, granular casts, blood casts, colloid casts and uric acid crystals. In about one month the urine was normal.

In studying this case and analyzing the other reported cases he gives the following conclusions:

Nephritis is a rare complication of influenza, occurring chiefly in young adults and children; in infancy it is almost unknown. Albuminuria is probably present in all severe cases. Hematuria alone is not infrequent, and, like the nephritis, is seen oftenest in early life. The sexes are affected equally. The nephritis may appear early in the influenza or at varying periods after the acute symptoms have subsided. It is usually an early complication, occurring in one-half the cases within eight and in two-thirds of the cases within twenty-one days from commencement of the influenza. The clinical type varies. It may be that of an ordinary acute nephritis, but in the majority of cases is of the hemorrhagic type, this form being especially frequent in young adults and children. Edema is absent in more than half the cases and is apt to be slight. The onset is usually attended with fever. The nephritis is of short duration, generally lasting under three weeks. The prognosis is good, recovery being the rule, although a small number of cases pass into the chronic subacute stage. When influenza attacks those whose kidneys are already diseased it is apt to be serious and fatal.

The Malnutrition of Tuberculosis.—CRANDALL (*Ibid.*).—The writer discusses the various phases of tuberculosis in infancy and childhood, particularly in reference to the nutritive state.

He concludes as follows:

1. Wasting, anemia and other evidences of malnutrition are constant accompaniments of tuberculosis in children.

2. These symptoms may occur in infants long before local disease can be detected, and occasionally no local signs whatever are manifest before death.

3. In infants tuberculosis shows a special tendency to be disseminated or to conceal itself in the deep tissues, as the lymph nodes. The disease may then run a course identical with simple marasmus.

4. In some cases a period of anemia and wasting is followed by a stage of irregular fever, after which local lesions appear, usually in the lungs.

5. In other cases tuberculosis in children begins with well-marked local manifestations, particularly pneumonia. In these, evidences of malnutrition appear promptly and are usually progressive.

6. The anemia of tuberculosis, whether it appears before or after the occurrence of other symptoms, is usually a simple anemia, and presents nothing characteristic.

7. A diagnosis of tuberculosis cannot be made alone from the character of the anemia or the malnutrition. However, persistent and increasing malnutrition in a child without discoverable cause is always suggestive of tuberculosis.

8. Anemia in adolescents should receive prompt and active attention, for it vastly increases the danger of tubercular invasion, which is particularly common at that period of life.

Tuberculous Meningitis.—CAUTLEY (*Med. News*, January 4, 1902).—At the Society for the Study of Diseases of Children (London) Cantley recently read a paper on the etiology and pathology of tuberculous meningitis in children based upon the best post-mortem and clinical findings in the last twenty-seven fatal cases under his care. Twenty-two were children under five years of age and only five were between that age and ten years. Family predisposition existed in five cases. In only two was the disease limited to the membranes of the brain and cord. In twenty-three the glands of the mediastinum were cheesy, and in four the mesenteric glands were also cheesy. From this study a brief summary is given. So-called heredity means exposure to infection. Injury is rarely an exciting or a predisposing cause. The respiratory tract is the great channel of infection. The alimentary tract is rarely primarily affected. Tuberculous milk is rarely, if ever, the source of the infection. The outlook for life is always hopeless on account of the extent of the tuberculous disease elsewhere in the body. The evidence obtained from the examination of the brain shows that all operative treatment should be discarded.

Congenital Dilatation of the Colon.—GWYNNE (*Ibid.*).—He showed a case of congenital dilatation of the sigmoid colon. The boy was sixteen years old, obstinately constipated since birth, and had chronic enlargement of the abdomen up to thirty-one inches in circumference at the navel before admission. No action of the bowels could be obtained, and an iliac colotomy was done. After the operation the boy improved in general health and his abdomen reduced to almost normal proportions.

Amebic Dysentery in Children.—AMBERG (*Bull. Johns Hopkins Hosp.*, December, 1901).—This is a very important contribution to the study of amebic dysentery. Five cases are reported. The diagnosis was based upon the finding of motile amebæ containing red-blood corpuscles. The cases were moderate in intensity. The age of the children was two to five years. Four were boys. They came under observation at the dispensary.

Little fever was present. The stools varied in frequency from four to twenty-four. Only one complained of much pain. In two cases prolapsus recti occurred. No abscess of liver was found. The reaction of the feces was mostly alkaline. They were offensive, liquid or solid, and accompanied by bloody mucus. The ameba may be found only on repeated examination. If in the passages of a child Charcot-Leyden crystals are found, amebic dysentery should be considered. The blood picture varied greatly. A leucocytosis (13,800 to 27,000) existed in every case when first examined.

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

Glycosuria and Insanity.—W. R. DAWSON (*Med. Press and Circular*, January 1, 1902).—Cases of glycosuria associated with insanity belong to two classes—those in which marked mental phenomena have arisen in the course of a glycosuria which, presumably, gave rise to them, and those in which glycosuria developed as a symptom during an attack of mental disease. The former class is rare, the latter fairly common. Some mental depression is very nearly always found in individuals suffering from diabetes, but it is rare that such symptoms develop into actual insanity. The clinical histories of seven cases are given in

this article, the first case of which belongs to the first division. The prevailing characteristic in all these cases is mental discomfort in varying degrees and severity. The author does not think that glycosuria is necessarily a bad prognostic symptom, as five out of the seven cases made good recoveries.

Multiple Sclerosis of the Central Nervous System.—T. HOFFMAN (*Deutsche Zeitschrift fuer Nervenheilkunde*, vol. xxi., Nos. 1 and 2).—A *resume* of the modern conception of multiple sclerosis, based upon the observation of one hundred cases and the post-mortem examination of three cases. Under etiology, the greatest importance is given to trauma and infectious agents. In fully one-half of the cases no etiological factor was obtainable. Symptomatology: the polymorphic character of the symptoms is especially emphasized. As a matter of fact, outside of the classical symptoms, such as nystagmus, intention tremor and spastic parietic gait, almost any symptom peculiar to the nervous system may be a part of the clinical picture of multiple sclerosis. Great stress is laid upon the eye symptoms, and in this respect the presence of a beginning optic neuritis, especially of the temporal side of the eye-ground, is of the greatest significance. All cases of so-called hysterical optic neuritis in which eye-ground changes are found are probably cases of atypical multiple sclerosis. There are some twenty-three diseases which are of interest from a differential diagnostic standpoint. The most important of them are tabes dorsalis, hysteria, combined system disease, brain tumor, dementia paralytica, neurasthenia, paralysis agitans. Multiple sclerosis probably cannot be cured. The length of the disease varies from a few months to many years, the patient dying from some intercurrent disease.

Pathology.—In the multiple sclerotic foci may be observed changes in the blood vessels, in the neuroglia and in the specific nerve elements. Outside of the increase in the neuroglia elements the most striking and perhaps the characteristic change is the disappearance of the myelin sheaths with the normal condition of the axis cylinder and nerve cell. This change has been called the naked axis cylinder. It seems rather certain that this is the one typical pathological change found in this disease.

The preservation of the nerve cell with an intact axis cylinder prevents any secondary degeneration from taking place, a fact which may be regarded as the second point in the pathology of this disease. In which of the three elements of the central nervous system the process plays its chief part, whether in the neuroglia, the blood vessels, or the nerve cells, is as yet undecided.

Dietetic Treatment of Epilepsy.—SCHAEFER (*Neurog. Centralblatt*, No. 1, 1902).—An account of three cases upon whom the treatment of Toulouse and Richet was tried. This treatment consists briefly in the withdrawal of all chlorine compounds from the food, especially the NaCl, and supplying in their places the bromide salts. In this way very large doses of bromide can easily be borne. The cases upon which this report is based were all old chronic epileptics with high degrees of mental enfeeblement. They averaged twenty to thirty attacks per month. The experiments lasted two weeks and were carried out with the greatest care. The attacks ceased wholly in one case after two days, and in the others in five and ten days. The psychical condition was markedly improved, as was also the physical. As soon as the old diet was again given to the patients the seizures returned. The author believes that this diet treatment is a very valuable therapeutic adjunct in the treatment of epilepsy.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. JOHNSON, M. D.

Cure of Chronic Bright's Disease by Operation.—EDEBOHLS (*Med. Rec.*, December 21, 1902).—The author first operated upon chronic nephritis, November 29, 1902, and while the operation was primarily a nephropexy, done for the relief of a loose kidney with nephritis, the result was a cure of the nephritis. In all he has operated upon six cases of nephrotosis with nephritis, obtaining favorable results in four. On January 10, 1898, he undertook for the first time this operation for the purpose of curing chronic Bright's disease, doing a bilateral nephropexy, with radical cure of the Bright's disease. He reports eighteen cases operated upon for chronic Bright's disease, five of which had right chronic interstitial nephritis; four had left chronic interstitial nephritis; four had right and left chronic interstitial nephritis; two had right and left chronic parenchymatous nephritis; three had right and left chronic diffuse nephritis. In fourteen of the eighteen both kidneys were operated upon; in twelve at one sitting, and twice at two sittings. In four cases operation was performed on one kidney only, in every instance the right. Two of them recovered complete and lasting health.

Chronic Bright's disease was unilateral in nearly one-half of all the cases, which fact was somewhat of a surprise and revelation to the author. He finds no difficulty in recognizing the disease in the kidney as it lies pulled through the wound before him with the blood circulating through it. From two cases a piece of the kidney was obtained, and the diagnosis verified by the pathologist.

While extensive denudation of the kidney was a factor in all the nephropexies, in the last two cases total extirpation of the capsule was done; in one, bilateral at one sitting; in the other the patient had but one kidney. The right had been removed for a septic process some months prior.

The method of operating is in part as follows: After cutting down to the kidney, it is freed from its fatty capsule and brought out through the wound to full view. The capsule proper is incised along the entire length of the convex external border and clean around the extremity of either pole. Each half of the capsule is now dissected from the organ and cut off clean to its junction with the pelvis, and removed. The kidney is dropped back in place and the wound closed without drainage, unless there is extreme edema of the parts, when drainage is used. Ether was the anesthetic used in all cases except one.

Of nine cases operated upon one year or longer ago, one only failed of radical cure of the Bright's disease. This one had the left kidney removed by another surgeon three years later, and the right kidney, which the author had operated upon, sustained life for five years longer, when a third surgeon did a hysterectomy, from which the patient died. Four cases were operated upon six months ago: two are free from casts and albumen; the other two show improvement. In the two last cases operated upon, the time is too short for deductions.

The author believes, especially from the above eight cases of cure operated upon one year or longer ago, that chronic Bright's disease is curable by operation, but as the time required for improvement to begin to show itself is ten days or more, and as this improvement is gradual, the late stages of the disease may not be fitted for the procedure.

While operating on a kidney on which a nephropexy had formerly been done, he observed numerous arteries large enough to require ligation, passing between the fatty capsule and the kidney with the flow of blood towards the kidney. This increased blood supply, most probably, leads to gradual absorption of the adventitious tissue in the diseased kidney, giving relief to the tubules

from pressure, and allowing the epithelia to regenerate. The cure is gradual, requiring from one to twelve months. It is not a relief of kidney tension from removing the capsule, but of vascularization. The capsule in chronic Bright's disease never compresses the organ, although it may be adherent, but may even sit loosely upon the kidney. The fatty capsule and the kidney are both liberally supplied with blood vessels, and the denuded kidney furnishes an extensive surface for intercommunication, while the fibrous capsule proper is an impenetrable barrier to the passage of the blood vessels.

The author operates if the expectancy of life is more than a month, if there are no incurable complications, and an anesthetic is not contra-indicated.

Renal Tension and Its Treatment by Surgical Means.—R. HARRISON (*Brit. Med. Jour.*, October 19, 1902).—In 1896 Harrison called attention to the improvement in certain renal cases after exploratory operation, in which no recognizable cause had been discovered for the clinical symptoms, and said it seemed reasonable to infer that these results were due to the relief of renal tension. Different from the times of Bright, we can now see and explore a living kidney with ease and safety *in situ*.

Other authors have described renal tension in such terms as "extravasation of blood in the Malpighian bodies," "exudation between the tubules," "the tubes are filled with degenerated epithelia," etc., and it is difficult to understand how repair can be carried through to a successful issue without occasionally requiring some mechanical assistance. Like the leakage of urine in the sub-urethral tissues, as it passes over a damaged epithelial lining of the mucous membrane, renal tension may cause leakage of urine into the kidney tissues, which may act as an active exciting agent. As in ocular tension in glaucoma, and testicular tension in acute orchitis, mechanical interference often saves the organ; so in renal tension.

The author reports six cases operated upon since 1878, which had kidney symptoms or lesions that were removed or improved after puncture of the organ. The first four were inflammatory, and the two others showed other phases of renal tension. As a type, he considered the groups of nephritis in scarlet fever. Only those cases which show no sign of improvement in the proper time, or those in which the type is malignant from the beginning, the organ being overwhelmed at once and showing signs of suppression, etc., need operation. When the tension is relieved urinary excretion increases at once and the general circulation improves.

The following may be regarded as some indications for relieving tension surgically: Progressive signs of kidney deterioration; suppression of urine or approaching that state; marked disturbance of the heart and circulatory apparatus arising in the course of inflammatory renal diseases.

The author splits the capsule along the convex border; or, if indications for exploration of the kidney are present, he extends the cut through the kidney substance into the pelvis. Numerous punctures over the surfaces of the organ may be made. A drainage tube is then inserted and the wound is sewed up about it. Drainage is essential, from seven to ten days usually, as there is always considerable discharge. It is a matter of indifference as to which kidney is operated upon unless there is something to indicate it, such as pain, since the relief of tension in one kidney relieves the other.

Radical Cure of Hypertrophy of the Prostate.—ALBARRAN (*Le Progres Medical*, December 14, 1901).—Albarran is convinced that the loss of vesical contractility is secondary to the glandular lesions and that the difficulties of urination are due to the mechanical obstacle of the hypertrophied prostate, together with the lessened vesical contractility. He reports fourteen cases operated upon

during the last six months without a death. All of them, ranging in age from fifty-seven to seventy-three years, were infected cases; three had pyelonephritis, and several were in a bad general state; eight are cured—that is, empty their bladder completely, are in a good general state, have clear urine and no need of a catheter; one is lost sight of; two recently operated upon still use a sound; three empty their bladder but are still under treatment, leaking a little from the perineum. He operates from the perineum, removing as much of the prostate as is possible without injuring the sphincter, doing the subcapsular operation after the manner of Nicoll, and injuring only the inferior wall of the prostatic urethra. The edges of the urethral wound are trimmed and partially sewed together, with enough space left to allow of drainage. Prostatectomy is the operation of choice, and the perineal route furnishes the best method of doing it.

Technic of Fixation of Prolapsed Kidney.—GOELET (*Amer. Med.*, December 28, 1901).—The author uses silk worm gut boiled in lysol, which renders it as pliable as catgut, for fixation sutures. While prolapsed kidney may be only one element in a general enteroptosis, nephropexy will aid in keeping the other organs in place, and should be done. Abdominal support which failed before the operation is successful afterwards. Nephropexy does not *per se* involve any risk. It has been an observation of the author that in every case of double nephropexy, the kidney most prolapsed is greatly congested, and its structure is so softened that sutures tear out easily, whereas the opposite kidney, where the degree of prolapse is less, is not congested, and its structure is firm.

At the operation an incision is made along the outer border of the erector spinæ muscle, beginning just below the twelfth rib and extending downwards parallel with the spine for about three inches. This incision is made with the knife down to the superficial fascia, which is then divided with scissors. The muscles are bluntly separated in the direction of their fibers until the fatty capsule of the kidney is exposed. This is opened with scissors well over towards the spine and upwards, and the kidney loosened from any attachment that it may have to the fatty capsule. Two fixation sutures are now passed through the capsule proper of the kidney in its lower half. The method of passing these sutures in the kidney is well illustrated, for which the original article must be consulted. The free ends of the sutures are next carried through all of the structures of the back, including the skin, one on each side, at the upper angle of the wound and tied over gauze. A gauze pack is now placed under the lower pole of the kidney to support it, to excite plastic inflammation, and for drainage, and brought out at the lower angle of the wound, the redundant fatty capsule having previously been trimmed. The wound is brought together with adhesive strips, and over this the dressings. The gauze drain is removed on the third or fourth day and additional strips of adhesive plaster applied. The fixation sutures are not removed until two days before the patient is allowed to get out of bed. The patient should be kept in bed three weeks.

Primary union is the rule.

Gonorrheal Vulvitis in Young Children.—PETERSON (*Amer. Med.*, January 11, 1902).—Peterson concludes in part as follows:

Gonorrheal vulvitis in young children is more common than is generally supposed. While more frequently met with amongst unhygienic surroundings in large cities, it is by no means a rarity in the less thickly settled districts. It is more frequent below the age of six, and is more common in girls than in boys. Specific vulvo-vaginitis in the large majority of cases arises from actual contact of the patient from some infected person; however, the disease may be spread by other means, such as a common bath, towels, bed-linen, etc. The vagina is more frequently affected in the child than in the adult, owing to the character of the epithelium. The tubes, ovaries, and peritoneum may be involved in the

pathologic process. It is not improbable that certain diseases of adult life may be ascribed to gonorrheal infection in infancy. Purulent ophthalmia and rheumatism are quite frequent complications. The treatment of specific vulvo-vaginitis must be energetic to be of any avail. Under certain conditions the vaginal orifice should be widely dilated and the vaginal pus cavity properly drained.

DERMATOLOGY AND SYPHILIS.

IN CHARGE OF

MARTIN F. ENGMAN, M. D.

Syphilitic Reinfection.—(*Annales de Dermatolog. et de Syph.*, December, 1901).—MRAGEK presented a man before the Gesellschaft der Aerzte in Wien (February 22, 1901), who had contracted syphilis seven years ago; he was then thoroughly treated with injections of sozoiodolate of mercury and iodide of potassium. In the course of the month of October previous to the presentation he had been newly infected. At the present time he presented the cicatrice of the chancre, adenopathis and a syphilitic exanthemata. In this case one finds all the conditions necessary to make a positive diagnosis of reinfection.

J. Neumann has observed in all eight cases of syphilitic reinfection, the shortest interval between the two attacks being two years.

These cases demonstrate in an irrefutable manner that syphilis is curable.

One must admit a reinfection when the ganglionic enlargements, the syphilitides and the course of the two infections have been observed by the same physician.

Granuloma Annulaire.—H. RADCLIFFE-CROCKER (*British Jour. of Dermatology*, January, 1902).—Dr. Crocker reports six cases—four personal, one of Dr. Pringle's and one of Mr. Pernet's—of an eruption possessing definite characters in common which show that they belong to one clinical group. In brief, the principal characters consist of nodules or papules of slow development which tend to form circles by partial coalescence, leaving the component nodules still visible. They involute slowly, so that the circle is broken, and often a crescent or gyrate patch is left. The inner or involuted side of the ring slopes down gradually into the normal skin, leaving the part which has been affected slightly reduced for some time; the outer border is more abrupt, but crenate or nodular, and there may be a narrow areola. The color of the lesion, red or pale. The nodules are firm, some may have a warty character (in two cases these were associated with common warts). Often the lesions are flat and suggestive of lichen planus. The location is chiefly on the wrists, backs of the hands and fingers, also on the neck; they have also been seen on the head behind the ears and upper part of the face, seeming to have a selection for the bony prominences.

Dr. Crocker concludes that these cases, clinically and histologically, appear to correspond with the pathological condition we call granuloma.

Disseminated Gangrene of the Skin in Children.—A. VIELLON and J. HALLE (*Annal. de Derm. et de Syph.*, May, 1901).—This case gave the authors a good opportunity for thorough study. A child eighteen months old had numerous phlegmonous ulcers on the neck and chest, following an attack of measles, death ensuing in eleven days. In the beginning the ulcers were the size of penny or slightly larger, but before the end they destroyed large areas down to the muscles and bones.

From the open ulcers the pus gave the staphylococcus, but when taken from

an unopened abscess by a pipette the cultures showed a bacillus staining by Gram's method and the aniline dyes. This organism grew best as an anerobic, as whitish grey colonies on agar-agar and bouillon. It is motile, straight or slightly curved, often in pairs or with branches. The bacillus inoculated into skin of animals caused gangrenous ulcers and abscesses.

From the characters of the organism the authors consider it to be identical with the bacillus ramosum of Veillon and Zuber.

Histologically in the deeper part of the corium endarteritis considerable infiltration was found with this bacillus in masses, while superficially there were cocci in pairs or singly.

Flesh-Colored Powders, Ointments and Pastes.—HUGO GOLDSCHMIDT, M. D., (*Therapeutic Monthly*, December, 1901).—The writer has discovered a procedure which meets all the requirements of simplicity and cosmesis in imparting to the ointment, powder or paste a flesh tint. He calls this solution "ichthosin" and is composed of eosin and ichthyol in such proportions that added in certain quantities to the base it imparts a flesh tint. He has five different solutions of this preparation, graduated according to the amount of red it contains, and are designated as ichthosin No. 1, 2, etc. Solution number 1 is the weakest in red. In every prescription ten per cent. of oxide of zinc must be added to give the requisite white color.

Trophoneurosis Affecting the Hair, with Photographs of a Case.—F. SAVARY PEARCE (*American Medicine*, December 28, 1901).—An interesting case of trophoneurosis affecting the hair is described by this author. The patient is an American woman of twenty-seven years. Previously she had a very heavy head of brown hair, with jet-black eyebrows and eyelashes. Ten days before the heavy alopecia developed she had a "cold in the head," and this was followed by an herpetic eruption of the face, the back of the neck and the region about the mouth. This was followed by extreme itching about the face and vulva. On the morning of November 18, 1900, she noticed a bare spot on the vertex of the head about the size of a twenty-five cent piece. The hair rapidly fell out and was completely shed. The eyelashes, brows, etc., and hair of the pubes fell out, also the hair on the side of the face, arms, but none of the axillary hairs. The hair of the scalp returned sparsely two months after the initial attack, and was snow white. Her eyebrows and eyelashes returned but were white. Different remedies had no effect. Electricity and phosphorus did not seem to do much good. By October, 1901, a few black hairs had appeared on the scalp, the left eyebrow had returned to its original black color. The history of the case gives but one clue to the origin of the trouble, and that is, some mental worry over trouble with a friend. There was a general condition of neurasthenia present, too.

LARYNGOLOGY AND OTOTOLOGY.

IN CHARGE OF

WILLIAM E. SAUER, M. D.

Infective Otitis Media Without Its Usual Subjective Symptoms.—HIRAM WOODS, JR. (*Maryland Med. Jour.*, January, 1902).—When there is no appreciable defect in the hearing, subjective noises are absent, the ears are free from pain or discharge, and the pharyngeal lesions absent or trivial, if otitis media occurs under these circumstances, and produces only such symptoms as are common to infection anywhere, the cause of the symptoms will be discovered only if

there is appreciation of the importance of embracing the ear in routine examination. The clinical history of such cases runs about this way: The patient, generally a child, has general malaise, chilly sensations, and more or less fever. There may be a little sore throat. Diagnosis is withheld or made as "grippe." After three or four days there is earache of short duration, heat is applied, and soon pain is relieved by perforation of the drum.

The case is looked upon as an otitis media, sequel to "grippe." The author has seen a number of such cases during the past two years, and accounted for them as indicated. Two of the cases developed mastoid symptoms after tympanic disease had subsided, and hearing had become normal. Operation showed extensive destruction of the cells with necrosis of the inner mastoid table and exposure of the sinus and dura. A brief history of three cases is given, viz.:

One was a case of infectious endocarditis seen at the Johns Hopkins Hospital. The patient did not seem very ill. There was some fever, with a decided leucocytosis. In looking for a cause, other things having been excluded, a history was obtained of transient earache and defective hearing on one side some two weeks previous. Inspection showed redness in Schrapnell's membrane, and incision evacuated a little pus from the attic, showing streptococci. The history of ear trouble before anything else and the findings, when the surgeon operated, makes it strongly suggestive that the aural affection was primary, and the fatal endocarditis secondary.

The second was that of a little girl who had had transient ear trouble, with slight pain and a few days of fever. When seen, two or three weeks later, the child was supposed to have typhoid fever. Blood examination negatived this, but showed increased leucocytosis. It was only then that the ear trouble was recalled. Signs of attic inflammation were found. The drum was incised, and recovery was immediate.

The third case was that of a boy nine years old. He was taken ill on April 23d with nausea and fever. On the 26th he developed right earache, with otorrhea two days later—a profuse, stringy discharge showing streptococci. There was no local mastoid tenderness nor redness. Pharynx somewhat congested. Leucocytosis estimated at 13,000. Otorrhea ceased in four days, and the child seemed convalescent. On the evening of May 10th, after a short paroxysm of earache, the temperature reached 104.4 F. There was a little pain over the mastoid and some slight discharge, which lasted a day, and the ear recovered without a mishap. Six days later, on the morning of the 16th, the child became restless, and had a temperature of 101 F. No renewal of the trouble could be found in the right ear, but the left drum showed some congestion of the upper posterior angle. Nothing else could be found to account for the fever. During the night he developed pain. The next day the redness had extended, but there was no bulging. Incision of the drum was made and prompt recovery followed. This child showed increased leucocytosis three days before local ear symptoms developed. However, the right ear was evidently the seat of infection. At the time of operation there was very little pain in the ear.

The lessons such cases teach us are that the ear should be included in routine search for infection causing general symptoms, whether or not there is loss of function or earache; a blood examination may be of service in doubtful cases of ear disease; when infection has been traced to ear, the latter should receive the same treatment—drainage—which surgery gives elsewhere.

The Relation of the Middle Turbinate Body to Chronic Diseases.—CHARLES H. BAKER (*Phil. Med. Jour.*, December 28, 1901).—The author says that the easy accessibility of the inferior turbinate body, and its proneness to participate in all nasal irritations and to respond by swelling and producing nasal obstruction, has made it the scapegoat for the rest of the offending organ.

Acute observers have long since recognized the fact that chronic nasal disorders exist which are out of the sphere of influence of the inferior turbinate, but the weight of authority favored nasal stenosis as the cause of nasal disease, and the possibility of other factors being more active than this one has been overlooked.

A brief review of the anatomy of the middle turbinate is given with the following indications for its removal:

1. In cases of nasal polypi.
2. When the openings of the sinuses are occluded by swollen membrane which is not yet polypoid and which does not respond to other recognized modes of treatment.
3. Crusting of fetid discharges in the upper portion of the nasal chambers in non-specific cases.
4. In cases of so-called "bullous" hypertrophy of the middle turbinate.
5. When the middle turbinate lies in close contact with the septum and produces various nervous disturbances, as sneezing, coughing, headache, asthma, etc.
6. Vaso-motor rhinitis running along into other than the normal period of the year, which, with the return of potency and improved breathing, still suffers from pressure, sneezing, reflex cough, etc.

The operation is done as follows: After cleansing the nose, an application of eight per cent. sol. of cocaine with a pledget of cotton on an applicator or wad, followed by thin pledgets laid on the upper surface, and between bone and outer wall, where they remain ten minutes. Adrenaline is then applied. Holmes' middle turbinate scissors are then used and the attachment of the bone divided from before backward. If the rear portion is out of reach it is removed with snare. The cavity is packed with iodoform gauze, which is usually removed the following day. Frequent cleansing with borax sol. is done until healing is complete.

Laryngeal Paralysis and Their Importance in General Medicine.—J. W. GLEITS-MANN (*New York Med. Jour.*, December 14, 1901) considers the organic causes of laryngeal paralysis under two distinctly separate divisions, viz.: those emanating from the bulbous and spinal column, and peripheral ones. The former are softening processes, hemorrhages, syphilis, tumors, diphtheria, progressive bulbar paralysis, amyotrophic lateral sclerosis, syringomyelia, and locomotor ataxia. Peripheral causes are tumors of the neck (cancer of the esophagus), aneurism of the aorta, of the innominate, or of the right subclavian (on account of the greater frequency of aortic than subclavian aneurism, the left recurrent is oftener paralyzed than the right), mediastinal tumors, such as malignant growths, infiltration of the peritracheal or bronchial glands in syphilis, pleuritic adhesions, as in tuberculosis, traumatism and injuries; further, infectious diseases, influenza, scarlet fever, typhoid fever, toxic influences, principally lead, which is apt to produce also adductor paralysis or rheumatism, both causing peripheral neuritis, although the diagnosis of rheumatism ought not to be made hastily and before an earnest and conscientious search for other factors has been made. The paramount importance of these paralysis (especially of the abductor muscle) for the practitioner results from the fact that it has very often been accidentally discovered, at a laryngoscopic examination, and is also frequently observed before the underlying grave affection has been recognized or has caused any perceptible symptoms. Two examples are cited. One a case in which abductor paralysis antedated all the other usual symptoms of locomotor ataxia, and another in which the position of one vocal cord in the median line (in an otherwise apparently healthy person) was the incentive to a careful examination of the entire organism. In the latter an aneurism was found. Another equally important point for practical medicine consists in the absence of any laryngeal subjective symptoms in many cases, when only unilateral abductor paresis is

present. The author advises that in all doubtful and obscure troubles a thorough examination of the larynx should be made.

Post-Scarlatinal Diphtheria and Rhinorrhea and Otorrhea.—EDGERTON H. WILLIAMS (*British Medical Journal*, December 21, 1901) has studied post-scarlatinal diphtheria, rhinorrhea and otorrhea, and believes it advisable to make bacteriological examinations of the discharge in all cases of rhinorrhea and otorrhea in scarlet fever, excepting possibly the acute attack of rhinorrhea. When bacilli are found in such cases, if they at all resemble the diphtheria bacillus they should be regarded as a modified variety of that organism. Patients presenting those complications should be isolated. He does not definitely advise the administration of antitoxin to patients presenting diphtheria bacilli in these discharges, but in the two cases that he reports, rhinorrhea was followed by the deposit of membrane in the throat; and it is possible that the use of antitoxin might have prevented this formation. These discharges are frequently unaccompanied by sore throat or other symptoms, and may be easily overlooked.

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

Noma of the Eyelids in an Infant.—MARLOW (*Ophthalmic Record*, December, 1901).—The patient was an emaciated, ill-nourished baby of three weeks. The ocular trouble began at the end of the first week with swelling of the lids and thin, non-purulent discharge from the conjunctiva. Later a "pimple" formed on the skin of the upper lid, which eventually broke down. The ulcer thus formed extended until all tissues of the upper and lower lid were destroyed. The cornea, which was covered by a slough of the necrotic tissue of the lid, became opaque, ulcerated, and finally perforated with prolapse of the iris. Spreading of the ulcer was controlled by Labarraque's solution. The child died at the age of three months.

The Value of Ocular Examination as an Aid in the Diagnosis of Certain Manifestations of Hereditary Syphilis.—PUEGH (*Archiv. d' Ophthalm.*, November, 1901).—Of twenty-seven cases of interstitial keratitis observed during the past six years, Puegh has found in eleven well-marked affections of the joints, principally of the knee, more rarely of the elbow joints.

The arthritis ran a chronic course and was usually diagnosed as "rheumatism." It failed, however, to respond to antirheumatic and tonic treatment. Finally a typical interstitial keratitis developing, a "mixed treatment" was instituted and the joint affection rapidly improved.

Puegh suggests that the classic symptom-group of late hereditary syphilis, *e. g.*, Hutchinson teeth, interstitial keratitis and auditory disturbances, be enlarged to include these joint affections.

Beef Worm in the Orbital Cavity.—T. W. F. GANN (*The Lancet*, January 4, 1902).—The case, which occurred in British Columbia, is thought to be unique. The patient, a young male, gave a history of pain in the left eye, and "a sensation as if something were moving about within the socket." Examination revealed a moderate exophthalmus and enormous bulging of the entire inner canthus.

Immediately to the inner side of the caruncle was a minute circular orifice, through which the tail end of the worm protruded from time to time. The head was deeply imbedded in the orbital tissues.

Following the method of treatment in vogue among the negroes, Gann injected a few minims of a strong solution of tobacco. A few hours later the worm was found to be inactive and was extracted with forceps. The patient made a good recovery with vision unimpaired.

The Non-Surgical Treatment of Heterophoria.—G. M. GOULD (*J. Am. Med. Assn.*, November 23, 1901).—Gould insists that “any operative treatment whatever of heterophoria is not only useless but bad. For not only does it not cure, but . . . it makes real cure far more difficult, sometimes even impossible.” Heterophoria depending, in the great preponderance of cases, on an error of refraction, rational treatment should concern itself principally with the fitting of appropriate glasses.

Hyperphoria frequently disappears with proper correction of the ametropia, prisms rarely being required. Patients with high degrees of hypertropia are made entirely comfortable with prisms incorporated in their correction. The factors of proper treatment are: (1) accurate estimation of the refraction; (2) temporary *partial* neutralization by prisms in hyperphoria of 3° or over; (3) ocular gymnastics (excursions of the eyeballs upward and downward); (4) careful regulation of the position of the book or writing.

Esophoria of high degree may be compatible with ability to use the eyes comfortably and for long periods, provided the ametropia be accurately corrected. Cases in which suitable glasses fail to restore the muscular balance frequently are without symptoms.

Exophoria is by far the most frequent of the heterophorias, and “the most amenable to treatment.” Therapeutic methods are: (1) accurate estimation of the ametropia; (2) daily exercises with prisms, bases out, conforming in strength to the degree of exophoria, the strength being increased until esophoria has been established or the symptoms have vanished.

Extraocular Complications of Sympathetic Ophthalmia.—L. DE WECKER (*Ann. d'Oculistique*, October, 1901).—Schirmer (Graefe-Sacmish, 2d Ed., Part iv., p. 98) affirms that extraocular affections complicating sympathetic ophthalmia are extremely rare and should be regarded as coincidental. De Wecker dissents from this view, and cites a case of total deafness occurring in the course of a sympathetic ophthalmitis, where, in all probability, there occurred a migration of micro-organisms to the auditory nerves.

BOOK REVIEWS.

THE PRINCIPLES AND PRACTICE OF MEDICINE. Designed for the use of Practitioners and Students of Medicine. By WILLIAM OSLER, M. D. Fourth edition. D. Appleton & Co., New York. 1901. Cloth, \$5.00.

This work has become too well and universally known to the medical world to require words of recommendation. Since the appearance of the first edition it has been recognized by teachers and students of medicine as an ideal text-book. Each edition has been revised up to date in a manner that rendered the work an authority on general medicine. In the present revision the chapter on typhoid fever has been in great part rewritten, with the addition of recent experience gained from Prof. Osler's unlimited material. Recent progress in the etiology and prophylaxis of many diseases, such as malaria, dysentery, yellow fever, the plague, etc., has necessitated, too, an overhauling of those chapters.

The author's power of observation, his conscientious work, together with the vast amount of clinical material at his disposal, give the stamp of reliability to all of his books and writings.

THE DIAGNOSIS OF INTERNAL MEDICINE. A Clinical Treatise Upon the Recognized Principles of Medical Diagnosis. Prepared for the use of Students and Practitioners of Medicine. By GLENTWORTH REEVE BUTLER, A. M., M. D. D. Appleton & Co., New York. 1901.

The work is divided into two parts. First, a study of symptoms and their indications; and second, a study of diseases and their characteristics. The object of the author has been to include in these pages all that is essential for making a diagnosis. Not only have subjective and objective symptoms and the ways of eliciting them been exhaustively dealt with, but also laboratory methods of diagnosis.

Nothing relating to diagnosis seems to have been overlooked. The illustrations are so numerous and the descriptions of complex methods so clear that the work will be as readily conceived by the student of medicine as it will by the practitioner. Too much attention has perhaps been given to the artistic production of the illustrations, the most of which have been taken from life. This, however, cannot be considered in any way objectionable. The work is invaluable to one desiring a means of ready reference to methods of diagnosis both in the consultation room and the laboratory.

PRACTICE OF MEDICINE BY EMINENT MEDICAL SPECIALISTS AND AUTHORITIES. Edited by GEORGE ALEXANDER GIBSON, M. D., D. Sc., F. R. C. P., Ed. J. B. Lippincott Company, Philadelphia. 1901. Vols. I. and II.

A hasty review of the list of contributors to this book is in itself sufficient to recommend it to those interested in scientific productions. Each chapter has been carefully prepared by a specialist of eminence in his branch. In this way only the most reliable and the most valuable information has been included in these covers.

The work consists of two volumes, the first containing exhaustive chapters on the general pathology of disease, general diseases, diseases caused by animal parasites, diseases caused by chemical substances, and diseases of the alimentary system. The second volume is devoted to diseases of the hemopoietic system, the circulatory system, the respiratory system, the urinary system, the integu-

mentary system, and the nervous system. The two volumes contain some 1600 pages of closely printed matter, with but few illustrations. Each disease is considered in a systematic way, which, together with a complete index, renders the information readily accessible.

AMERICAN EDITION OF NOTHNAGEL'S ENCYCLOPEDIA. TYPHOID AND TYPHUS FEVERS. By Dr. H. CURSCHMANN, of Leipzig. Edited, with additions, by WILLIAM OSLER, M.D., Professor of the Principles and Practice of Medicine, Johns Hopkins University. Handsome octavo of 646 pages, illustrated, including a number of valuable temperature charts and two full-page colored plates. Philadelphia and London: W. B. Saunders & Co. 1901. Cloth, \$5.00, net; Sheep or Half-Morocco, \$6.00, net.

It is a source of great satisfaction to those unfamiliar with the German to know that an American edition of Nothnagel's Encyclopedia of Special Pathology and Therapeutics has been authorized, and that many of the volumes are now in the press. The first of the series to appear is the volume on "Typhoid and Typhus Fevers," by Dr. H. Curschmann, of the University of Leipzig. The work has been edited, with additions, by Prof. Osler. It contains, therefore, all that appeared in the original, together with the latest views on the subjects in hand and the results of the author's own observations and investigations.

The chapter on the Bacteriology of Typhoid Fever has been thoroughly reviewed, with special reference to the distribution of the bacilli in the urine, rose-spots, blood, etc. The chapters on the Pathology, Diagnosis and Surgery have also been reviewed, and many newer ideas added.

Even before its revision this work was considered the most complete monograph on the subject in existence. It now contains practically all that is definitely known concerning typhoid and typhus fevers. Its ideal arrangement, complete index and numerous charts render it an invaluable reference book to those who meet with these diseases in their varied phases.

THE EVOLUTION OF SEX. By Professors PATRICK GEDDES and J. ARTHUR THOMSON. Published by Charles Scribner's Sons, New York. Price, Cloth, \$1.50.

This book is the first volume of the "Contemporary Science Series," edited by Havelock Ellis. In twenty-two chapters a general survey is given of the essential phenomena of reproduction and sex. The authors outline the main processes for the continuance of organic life and point the way towards the interpretation of these processes. The subject is presented for the general reader or the beginner in the study of biology; the specialist in this field will, however, find the book valuable as each chapter ends with an exhaustive list of literature pertaining to its contents.

THE ANNUAL AND ANALYTICAL CYCLOPEDIA OF PRACTICAL MEDICINE. By CHARLES E. DE M. SAJOUS, M. D., and one hundred Associate Editors. Fully illustrated. Vol. iv. Philadelphia: F. A. Davis Company, publishers. 1901.

This fourth volume is in keeping with those we have noticed before. Each subject is so carefully presented and the current literature so thoroughly reviewed that it is a delight to turn the pages of this handsome book. In this volume appears one of the latest contributions of the lamented Geo. H. Rohe, whose teachings upon insanity have been so far-reaching. There was never a period of "let down" in the life and work of Geo. Rohe.

The topic of "Malarial Fevers" is ably presented by Prof. Wilson and Dr. T. G. Ashton. It cannot but serve the profession of the South and West.

In the preface special attention is called to the articles on "Intubation," by Prof. Waxham; "Diseases of the Liver," by Prof. McPhedran, of Toronto, and "Meningitis," by Dr. C. M. Hay, but these are not more noteworthy than many of the other chapters. The subject of "Leprosy" is treated by Dr. Sajous himself, who has had exceptional advantages for studying this disease.

It is hard to review a book which is itself a review. The success with which this great work is meeting is a guarantee that it appeals to the best men in the profession. Physicians nowadays do not buy books unless they need them, and it is surprising to know how many physicians find they need this cyclopedia.

THE FOUR EPOCHS OF WOMAN'S LIFE. A Study in Hygiene. By ANNA M. GALBRAITH, M. D., Author of "Hygiene and Physical Culture for Woman;" Fellow of the New York Academy of Medicine, etc. With an Introductory Note by John H. Musser, M. D., Professor of Clinical Medicine, University of Pennsylvania. 12mo volume of 200 pages. Philadelphia and London: W. B. Saunders & Company. 1901. Cloth, \$1.25, net.

The necessity of a better knowledge of womankind in those laws of nature which govern her physical being is generally acknowledged. But these laws are very complicated and the problem of presenting them to the laity in an intelligible way is a most difficult one. The greater must be our praise for the author who apparently has solved that problem. The subject is discussed in clear, comprehensible language, readily grasped even by those most unfamiliar with medicine. Specially noteworthy in this respect is the chapter dealing with the theories of menstruation and ovulation.

A careful medical examination of both sexes previous to marriage is a point worthy of consideration. We commend this book as of interest and value to every married woman.

THE DISEASES OF THE RESPIRATORY ORGANS—ACUTE AND CHRONIC. Arranged in two parts. By WILLIAM F. WAJGH, A. M., M. D. G. P. Engelhard & Co., Chicago. 1901.

This small work of 220 pages is devoted to diseases of the respiratory organs. The author gives as his reasons for introducing the work to the profession "that the treatment of acute affections of the respiratory organs has progressed far beyond that given in the text-books on practice," and then devotes two pages on hay fever. He suggests in its treatment that "possibly the attack could be prevented if the prospective patient wore a respirator charged with antiseptics or glycerin to prevent the access of the pollen." The author has a new and unique conception of the role played by the vaso-motor nerves in acute inflammations, and through this new knowledge expects to be able to attack disease "not only before the time when the diagnosis is usually made, but even before the malady has become fixed in the tissues." The work can hardly be considered compatible with the science of medicine.

A TEXT-BOOK OF PHYSIOLOGICAL CHEMISTRY. For Students of Medicine and Physicians. By CHARLES E. SIMON, M. D., of Baltimore, author of "Simon's Clinical Diagnosis," etc. In one octavo volume of 452 pages. Cloth, \$3.25, net. Lea Brothers & Co., Publishers, Philadelphia and New York.

This volume is intended primarily for medical students, both as a text-book and as a laboratory guide. It contains few references, and simply presents the most recent views and methods in physiological chemistry. The grouping of

the material is worthy of notice, and adds greatly to the clear presentation of the subject. The three great classes of food-stuffs, proteids, carbohydrates, and fats, form the subject of the first three chapters, and are followed by chapters on the chemistry of the ferments, digestive juices, digestive processes, and the excretions. The last half of the book considers in detail the physical and chemical characteristics of the fundamental tissues of the body and of the organs of the special senses. It is a valuable text-book.

THE PRINCIPLES OF HYGIENE. A Practical Manual for Students, Physicians, and Health Officers. By D. H. BERGEY, A. M., M. D., First Assistant, Laboratory of Hygiene, University of Pennsylvania. Octavo volume of 495 pages, illustrated. Philadelphia and London: W. B. Saunders & Company. 1901. Cloth, \$3.00, net.

This book presents a short and concise treatment of the subject in hand, and is intended for students of medicine and of architecture, and for physicians, as an aid in familiarizing themselves with the advances made in hygiene in recent years. It does not attempt to be exhaustive, but enters only into those phases of the subject which give the general principles upon which health officers and physicians work in dealing with conditions which are detrimental to health or which tend to improve it. The author devotes a greater proportion of space than has heretofore been given to industrial and school hygiene, and to military and naval hygiene. Into the important chapter on quarantine he incorporates the quarantine laws of the United States, together with the regulations for foreign and domestic ports and the frontiers of the country, and also the interstate quarantine regulations. It is well written, and very readable.

INTERNATIONAL CLINICS. Vol. II., Eleventh Series, 1901. Quarterly. Octavo, 304 pages. J. B. LIPPINCOTT COMPANY, Publishers, Philadelphia.

This volume of international clinics shares the excellent qualities of the series to which it belongs, and contains articles by a number of well-known writers, of which may be noted particularly: Surgical Analgesia by Injections of Cocaine into the Spinal Canal, by Tuffier; the Medical Preventive Treatment of Recurrent Hepatic Colic, by A. Chauffard; The Conservative Treatment of Appendicitis, by Broca; A Study of the Present Epidemic of Small-Pox, by Schamberg, of Philadelphia; A Resume of Actinomycosis of the Respiratory Tract, by Hektoen, of Chicago; The Relation of Osmosis and Ion Action to Clinical Medicine, by Sewall; the Etiology and Treatment of Internal Hemorrhages, by Douglas. Three studies in locomotor ataxia are contributed by H. S. Frenkel, M. Allen Staer, and Fournire, and a lecture by Cajal on the mechanism of mental operations. Blackader, of Montreal, writes on the acute dilatations of the heart in childhood and adolescence. Meade Bolten gives a critical estimate of the value of bacteriological examinations of drinking water.

ARBEITEN AUS DER PATHOLOGISCH - ANATOMISCHEN ABTEILUNG DES KOENIGLICHEN HYGIENISCHEN INSTITUTS ZU POSEN. Herrn Geheimrat Professor Dr. R. Virchow, zur Feier seines Achtzigsten Geburtstages gewidmet von Professor Dr. O. LUBARSCH. Mit 26 Abbildungen im Text und einer Tafel. Wiesbaden: Verlag von J. F. Bergman. 1901. G. E. Stechert, New York, agent. Price, \$2.25.

This volume is one dedicated to the great master, Virchow, in honor of his eightieth birthday. It represents a series of original investigations carried on in the pathologic-anatomic department of the Royal Hygienic Institute in Posen. The first article, written by Prof. Lubarsch, describes the manner in which the

pathologic department of this institute was founded and how it is conducted, with a description of the work done since its foundation. A series of affections which have been studied there is given by the writer, with statistics of the extent of the several processes, etc. Then follows a series of original articles by the different workers of the institute. One of the most interesting articles is that written by Lubarsch and his assistant, Mayr, entitled "The Investigation of the Effects of the Tubercle Bacillus on the Organism of the Frog." Another excellent article is that on the "Pathology of the Adrenals," by Rosenstein, in which a number of cases of Addison's disease were studied pathologically.

The volume is a valuable one, and forms an important and imposing addition to the current literature on pathology. The stamp of value of the book is the name of Lubarsch on its title-page, and certainly the reading of the text fully bears out the promise given by the name of this excellent pathologist.

ANLEITUNG ZUR DIAGNOSE UND THERAPIE DER KEHLKOPF, NASEN UND OHRENKRANKHEITEN. By Dr. RICHARD KAYSER, of Breslau, Germany. S. Karger, publisher, Berlin. G. E. Stechert, New York, agent. Price, \$1.00.

This little work of 128 pages embodies a series of lectures which the author has given in his post-graduate courses, and is intended solely for the general practitioner. Special attention is given to the various methods of examination. The text is very concise, but the illustrations are numerous. It is the first of the German publications to include the ear, nose and throat in one volume.

DIE THERAPEUTISCHEN LEISTUNGEN DES JAHRES 1900. A year-book for practitioners. By Dr. ARNOLD POLLATSCHEK. Volume xii. Octavo, 338 pages. Price, \$2.00. J. F. Bergmann, publisher, Wiesbaden. G. E. Stechert, New York, agent.

This year-book virtually forms a review of the important articles on therapeutics which have appeared during the current year, and affords a rapid grasp of the literature in question. Besides its alphabetical arrangement it has an index of authors and a subject catalogue. The abstracts are presented in a very readable style, and give a critical estimate of their contents. The printing is good, and the type is well chosen and easily read.

KURSUS DER MASSAGE. By Dr. LEOPOLD EWER, Berlin. 2d edition. Octavo volume of 183 pages, 78 illustrations. Price, \$1.25. Fischer's Medicin. Buchhandlung, Berlin. G. E. Stechert, New York, agent.

DER BAU DES MENSCHLICHEN KOERPERS: EIN LEITFADEN FUER MASSEUERE. By Dr. LEOPOLD EWER, Berlin. Octavo, 44 pages, 21 illustrations. Price, \$0.25. Fischer's Med. Buchhandl., Berlin.

GYMNASTIK FUER AERZTE UND STUDENTEN. By Dr. LEOPOLD EWER, Berlin. Octavo volume of 134 pages, 76 illustrations. Price, \$1.00. Fischer's Medicin. Buchhandl., Berlin. G. E. Stechert, New York, agent.

(a) The present edition, the second, has been divested of its anatomical section and the section on therapeutic gymnastics, each of which is published separately, as noted below. The greater space obtained in this way has been utilized by the author in incorporating into his book the recent advances in massage. The book contains a brief history of the development of massage, chapters on apparatus, on the physiological action of massage, and on the application of massage to the various diseases.

(b) The author gives a short, simple, easily comprehended statement of the essential points in the anatomy and physiology of the human body, for the use of masseurs. It represents the anatomical portion of the preceding volume, which the author was unwilling to burden with what could only be a synopsis.

(c) The present exposition of this subject is brief but to the point. The author makes a vigorous protest against indiscriminate and excessive gymnastics, and points out the benefits to healthy individuals of well-adapted exercises, both active and passive, conducted in moderation, and what a power for good properly chosen and well-directed exercises and movement may become, from a therapeutic standpoint. Besides articles on exercises for the thorax and in diseases of the chest, the chapter on educational exercises in *tabes dorsalis*, which have recently drawn much attention, and the one on deformities of the spine are satisfactory, and worthy of consideration.

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